The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 29. NO. 9. TULSA, OKLAHOMA, JULY 17, 1930

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Production Declines 68,853 Barrels

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Producers in Oklahoma, Texas and New Mexico Take Action That Will Further Lower Crude Oil Output

By James McIntyre

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

The largest decrease in the daily average production of crude oil in the United States registered in any week in recent times was recorded in the week just passed, when a decline of 68,853 barrels per day occurred. The bulk of the decline fell upon Oklahoma and Wyoming, but there was some decline in every producing division listed in the accompanying table excepting Arkansas, which showed a slight gain and California where production increased 4,000 barrels.

Oklahoma cut back 39,935 barrels a day and the Rocky Mountain area 13,881 barrels. Salt Creek, in Wyoming, a field which is drawn upon as needed at all times, experienced a deep cut, giving rise to the thought that Wyoming refiners reduced their runs to stills an appreciable amount.

One of the big events of the week was the change of attitude of the State Government officials of New Mexico, who have caught the spirit of the governments of other oil-producing states and have offered their co-operation in keeping the tremendously important Lea County fields down to pipe line requirements. The Hobbs Pool in New Mexico may hereafter be numbered among the sanely developed pools of the country. A meeting of operators in Dallas, Tex., on Tuesday, approved the recommendations of a special committee to cut production in all the main divisions of that State to pipe line and refinery needs, which will shave off about 76,000 barrels a day in Texas, if the Railroad Commission approves and the plan is carried out. Oklahoma operators on the same day consented to a further cut in their production to 550,000 barrels a day, if necessary, and this will be equitably distributed through the flush and semi-flush areas of the State.

Oil producers, wherever they have met, have expressed their approval of the action of refiners in deciding upon a reduction of crude runs to stills. The refiners are credited with the most constructive action taken in many years.

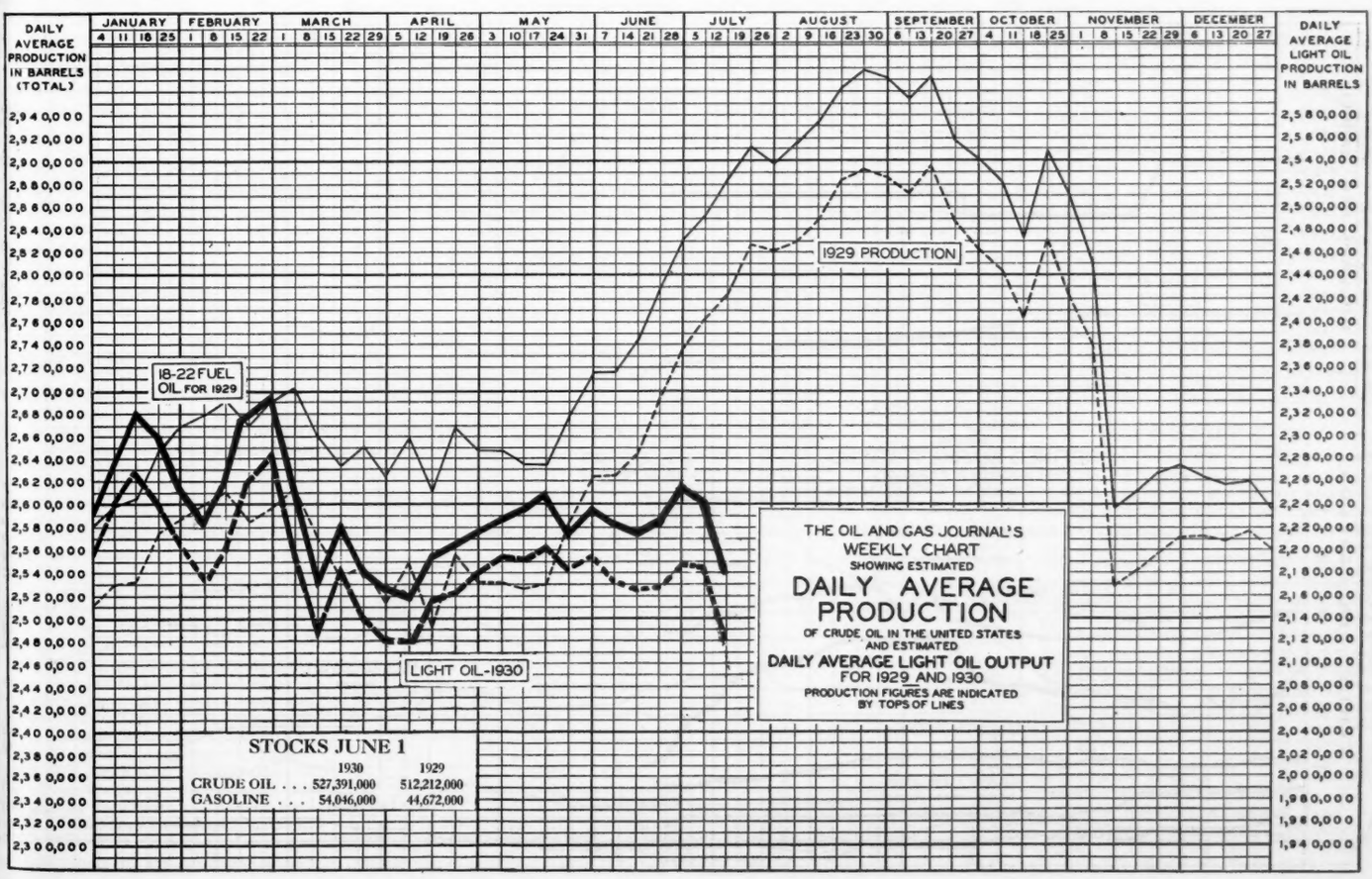
The whole industrial structure has been strengthened by the various moves made recently by widely scattered refiners and producers with the approval and co-operation of state governments wherever such co-operation was asked.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended July 12 and a comparison with the previous week follows:

	July 12		July 5	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	83,480	.....	105,625	.....
St. Louis-Pearson	30 665	.....	2 ,330	.....
Seminole	193,765	.....	202,895	.....
Northern miscellaneous	247,205	.....	257,900	.....
Southern fields	60,070	.....	59,370	.....
Total Oklahoma	615,185	.....	655,120	.....
West Texas—				
Hendricks	60,783	.....	61 215	.....
Yates	115,270	.....	120 650	.....
Remainder	119,538	.....	117,003	.....
Total West Texas	304,591	.....	306,868	.....
North Louisiana	34,300	5,230	34,920	5,120
Arkansas	17,785	37,810	17,810	37,520
North Central Texas	134,018	.....	139 673	.....
Texas Panhandle	102,588	.....	105,085	.....
East Central Texas	40 001	.....	41,348	.....
Kansas	127,770	.....	131,235	.....
Total Mid-Continent area	1,376,238	43.040	1,432,059	42 640
Gulf Coast	.....	202 968	.....	204.423
Southwest Texas	.....	89,223	.....	90,319
Eastern	133 000	.....	134.000	.....
Rocky Mountain area	88,461	.....	102,342	.....
California—				
Santa Fe Springs	113.000	.....	116,000	.....
Long Beach	99,500	.....	96 500	.....
Huntington Beach	28 000	.....	28,000	.....
Elwood	44,000	.....	42,500	.....
Ventura Avenue	49.500	.....	48,000	.....
Seal Beach	22,000	.....	21,500	.....
Remainder of State	165,500	87,000	164,000	88,000
Total California	521,500	87,000	516 500	88,000
Total United States	2,119,199	422,231	2,184,901	425,382
Grand total	2 541,430		2,610,283	

→ **Total Decrease 68,853 Bbls.; Light Oil Decrease 65,702 Bbls.** ←



STOCKS JUNE 1

	1930	1929
CRUDE OIL . . .	527,391,000	512,212,000
GASOLINE . . .	54,046,000	44,672,000

Natural Gasolines and Fuels Lower

Oklahoma Prices Continue Decline. Market Awaits Developments Due to Refinery Curtailments Programs. Gasoline Movement Improves

By C. O. Willson

Additional declines in natural gasoline prices and lower quotations on several grades of fuel oil were developments of the past week in the Oklahoma (Group 3) refined market. Prices on naturals dropped so that Grade AA was selling at 4 cents with sales of the BB and C grades as low as 3¾ cents. With the spot demand at a minimum regardless of price, fuel oils with gravities as high as 22 were selling under 50 cents a barrel. Some of the higher gravity fuels were also fractionally lower although the demand for low cold test high gravity grades suitable for furnace oil has improved.

Quoted prices on other refined products are generally unchanged. The refinery gasoline movement is heavy but there has been no improvement in prices. All grades are freely available. Kerosene continues to move slowly at low prices although several sellers are expecting improvement before the end of the month and during August. Although no general changes were announced in steam refined stocks and bright stocks, sales were made last week at lower prices to meet eastern competitive conditions.

Await Curtailment Results

Market observers are closely watching refinery curtailment programs not only in the Mid-Continent but all other refining groups as the key to the future market. Available current data show that several of the large refiners as well as some of the smaller operators have reduced their crude oil runs to stills and in some cases have curtailed their cracking operations. It is pointed out that these reductions have not been reflected in market quotations for the reason that many refiners are still liquidating stocks of gasoline and other products so that the supplies being offered from day to day are unchanged. In this connection the Oklahoma and Mid-Continent market generally on gasoline, fuel oil and several other products continues to be dominated by the sales policy of three or four major refiners with plants in the Middle West. At least two of these refiners have curtailed their plant operations. They continue, however, to quote low delivered prices to points within a radius of 200 miles from their plants reducing their storage, particularly gasoline, before attempting to secure better prices. These refiners sell at prices which would mean 5¼ to 5¾ cents for U. S. Motor gasoline at Oklahoma plants and 5½ to 5¾ cents for 60-62 400 end-point.

REFINED MARKET BAROMETER

The lowering of prices on one or more products continued in several refining areas during the past week. Gasolines, including natural gasoline, continue weak and prices were reduced when any changes were made. Tank car gasoline sales are highly competitive in all sections despite the general increasing consumer demand. Substantial curtailments in plant operations have been made by a number of large and small refinery owners and it is hoped the gasoline market will tighten. Kerosene is freely available and concessions in prices also rule in this product for domestic movement. Fuel oil prices were lowered in the Gulf Coast and some interior points. Among the lubricants weakness centers in the steam refined stocks and bright stocks prices again being lowered in the eastern areas. Eastern wax prices lower.

Mid-Continent—Better movement of gasoline with no changes in prices. Natural gasoline prices reduced. Fuel oil slow and prices lower. Fair demand for zero grades of furnace oils at firm prices. Lubricants and wax weak.

East Coast—Market unsettled on most products. Refinery gasolines quoted over wide range. Kerosene weak. Decline in cylinder stock prices continues. Prices on several grades of wax and petrolatum lower.

Pennsylvania—No important changes in gasoline with better demand. High gravity kerosene prices lower. Steam refined stocks and bright stocks prices reduced. Neutrals unchanged.

Gulf Coast—Bunker fuel oil prices for cargo movement reduced. Better tone to gasoline market. Pale and red oils unchanged.

California—Ending of price war in gasoline tank wagon prices on West Coast results in higher refinery prices. Natural gasoline price situation also improved. Other products unchanged.

Chicago—Gasoline market weak continues with offerings exceeding spot demand. Kerosene inactive. More inquiries for industrial fuel oils.

In the case of industrial fuel oils, Oklahoma refiners have been practically shut out of the Chicago demand which normally absorbs a part of the Mid-Continent output. Sales made by refiners in that territory last week would have netted Oklahoma refiners from 35 to 40 cents a barrel for the low gravity grades.

As long as these conditions obtain, those in touch with the market agree that no improvement in Mid-Continent prices is to be expected. Many are confident that the curtailed refinery operations will shortly bring an end to the "dumping policy" brought about by heavy stocks. However, few care to hazard a guess as to just when the improvement will get under way although predictions of higher prices on practically all products for August are heard. Others fear that a heavy liquidation of gasoline stocks will continue throughout the remainder of the summer.

Lower Crude Prices

Opinions vary widely as to the probability of lower crude oil price schedules and the effect on the refinery market should the reductions materialize within the next few weeks. Many feel that the refinery market has already discounted all possible unfavorable developments in the crude oil market and lower schedules would not result in lower prices on refinery products or prevent a recovery brought about by curtailed plant operations. Past developments have usually shown that the refinery market anticipated the crude oil schedules both on declines and advances. As one phase of this situation it is contended that should the lower crude oil schedules materialize no one except a few small operators

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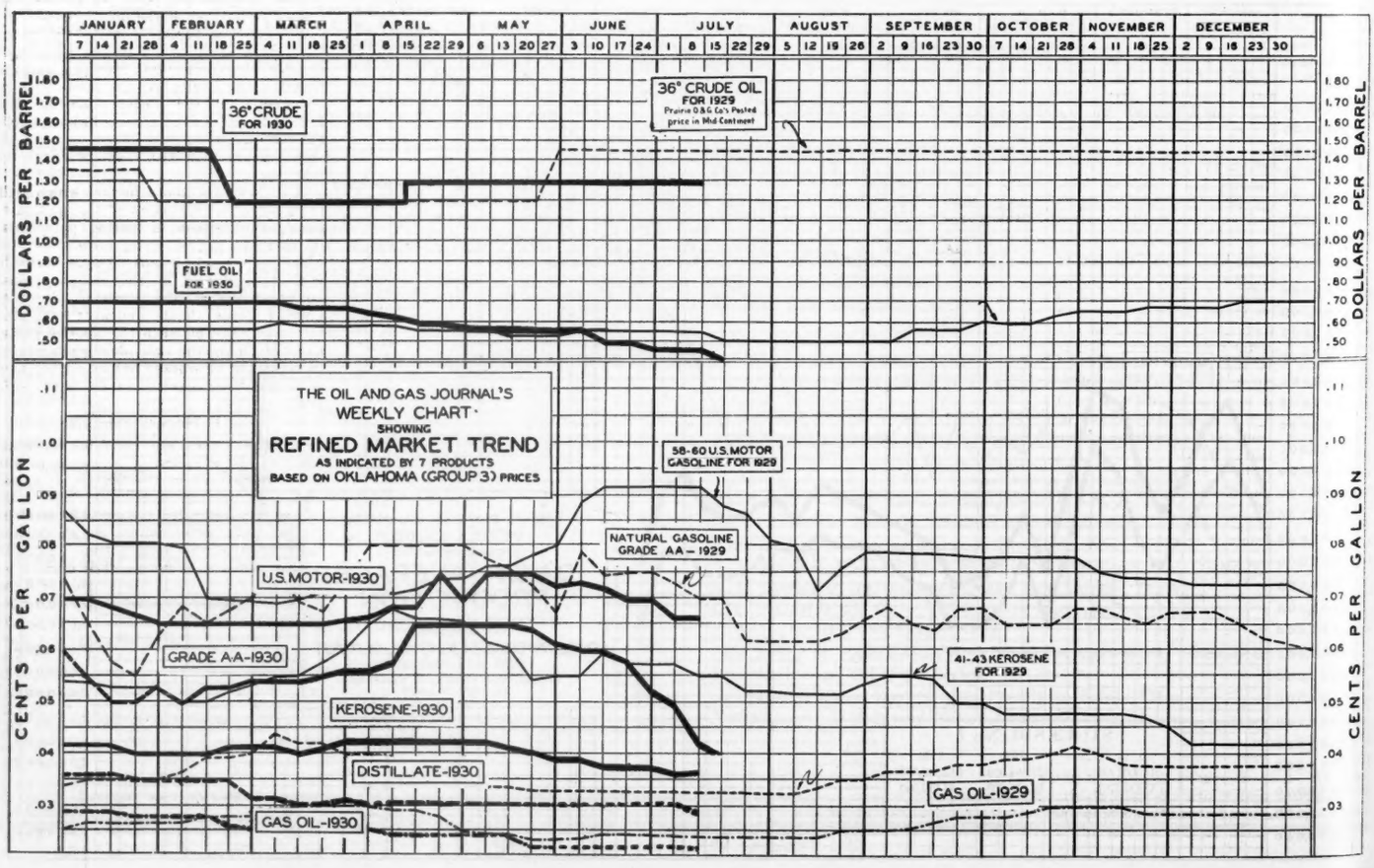


Texans Approve Further Curtailment

Recommendations of Special Committee Affecting all Producing Divisions Will Be Submitted to Railroad Commission

By L. E. Bredberg

DALLAS, Tex., July 15.—At a meeting of members of the Independent Petroleum Association, and Mid-Continent Oil and Gas Association and representatives of crude oil purchasers in Texas this morning at Dallas, the report which was compiled by authority of a special committee representing those various groups was read and approved except for a couple of details which were changed.

This report, which gives a picture of the present status of the oil industry in Texas, is to be submitted to the Railroad Commission of the State at once for its approval and recommendations.

Proration of production in the State as a whole is the object of the joint committee and final plans will probably be worked out by the Railroad Commission in conjunction with the aforementioned groups.

About 750,000 bbls. daily production will probably be lopped off in the State, this much representing the amount for which there is no current market. The Railroad Commission will probably call a hearing on the report immediately.

David Donoghue, technical advisor to the special committee, read the report at this morning's meeting. It was as follows:

David Donoghue's Report

Messrs. George Calvert, Rupert Ricker, A. M. Donoghue, John R. Suman, Warner Clark, Charles Roeser, R. R. Penn, Joint Committee of Independent Petroleum Association, Texas Division of Mid-Continent Oil and Gas Association, and purchasers of crude oil.

Gentlemen:

Production of crude petroleum has been steadily increasing year by year, not only in Texas but in the United States and in the world at large, until now greatly exceeding requirements, the entire oil industry is faced with a serious overproduction situation. Within the United States successful attempts have been made to reduce production by general curtailment of certain areas. Still there are more drastic reductions to be undertaken. Oklahoma is making efforts to reduce its production from 650,000 bbls. to 570,000 bbls. per day and California will probably reduce its 596,000 bbls. per day objective.

In Texas there is a grave emergency existing at present with production about 76,000 bbls. of oil per day more than for which there is an actual market, as indicated by the nominations of buyers for 786,800 bbls., with production at 863,400 bbls. per day. It is now that the seasonal demand is at its peak. Within the next few months less oil will probably be required necessitating a further cut of production. It is therefore of the greatest importance to the State to help control this by every means possible. The government and the people of the State have an interest that is threefold: First, from the taxes both on production itself and on the values of leasehold and royalty estate; second, on royalty accruing to the university from its oil holdings; third, on lease and royalty monies accruing to the public school funds on school lands with mineral classification.

The pipe line act which was passed by the last legislature was designed to remedy certain inequalities arising from this overproduction situation. This law will prove a valuable agent in remedying the dangers of existing conditions if rightly applied and with full co-operation of those affected. The oil operators of the State greatly appreciate the helpful attitude of the Railroad Commission and the stand it has taken in asking the advice and suggestions of the operators themselves toward the enforcement of the law. It might not be out of place to suggest that the committee offer its services and the services of its technical advisor to the Railroad Commission; and also to pledge the oil industry in general to fullest co-operation toward equitable and effective enforcement of the new law.

Principles to Be Observed

From a study of the new pipe line law, and taking into consideration conditions existing in the oil fields of Texas, it becomes apparent that certain cardinal principles must be observed in the promulgation of rules to govern its enforcement.

1. Small or marginal producing oil wells must be preserved and protected and the pipe line or marketing companies and all other agencies must assist in preserving and protecting these wells, even if such a policy entails some sacrifice. There are thousands of wells in Texas that are being operated at irreducible minimums, and production from them can not be cut if they are to continue to pay the expense of operating. Yet these wells are the backbone of the industry, and the preservation of their production is necessary to insure future stability, not only for industry but even for national defense. Should present economic conditions and attempts to curtail the production of such small wells be allowed to cause their abandonment, those wells and reserves of oil which they are draining will be forever lost. In fact, there would be an element of confiscation of private property should there be an attempt to hold the production of such wells below the point where they can be continued in operation. Costs of production vary in different districts according to the depths of the wells and quantity of fluid that is lifted, and, in applying methods of proration, a committee of operators should determine which wells come under this classification.

2. There are many wells in Texas which are producing considerable quantities of oil and in which the production cannot be reduced because of the fact that water is constantly encroaching, and if these wells are further curtailed there will be an irretrievable loss due to flooding by salty or sulphurous waters.

Burden on Flush Fields

3. Leaving out of the picture the two classes of wells mentioned above, it is obvious that the purpose of all curtailment or proration attempts must be the cutting down of production of flush fields or flush wells. As a corollary to the same thing, it is also evident that to some reasonable extent the larger flush wells and the larger flush fields must bear more proration or curtailment than the medium or smaller wells which are struggling along in effort for survival and yet may be classed as semiflush production.

4. The new law makes it very plain that there must be an equitable distribution of outlet between producers of each field; and that no producer is to be allowed, due to his own pipe line connections or affiliations or favorable contracts, to drain out from the ground his undue proportion of the oil thereunder.

5. The law further specifically states that there must be no unjust or unreasonable discrimination between various fields in the State. At the same time it specifies that the outlet must be distributed without unfair or unreasonable discrimination for oils of various grades and various qualities and geographical location.

6. There are many factors which will complicate the operation of the new law, such as questions of gauge, potentials, oil and gas ratios, water conditions and other matter which will have to be dealt with individually in the various pools. In other words, the Railroad Commission of Texas should endeavor to maintain a balance between the various pools, and then leave the individual problems in each pool to be worked out by supervisors or committees having to do with each pool.

Cut to Market Demands

7. The immediate problem confronting the oil producers of Texas is to cut their production to the market demands of the purchasing companies. This committee has requested the various marketing or purchasing companies to outline their needs for as long a time ahead as it was possible to do so. The committee has received the full co-operation of most of the companies affected. From this preliminary work, it is evident that Texas is now producing 863,400 bbls. per day, and has an outlet or demand of 786,800 bbls. per day. If a balance is to be maintained between supply and demand in Texas, it will be necessary to curtail the present daily output by at least 76,600 bbls. It is an easy matter to say what should be done, but much more difficult to say how it can be done.

Supply and Demand

There follows estimates of demand of crude oil in various districts of Texas,

(Continued on Page 153)

OKLAHOMA PRODUCERS VOTE TO CUT OUTPUT TO 550,000 BBLS. A DAY

The allowed production of Oklahoma from July 15 to September 1 was reduced to 550,000 bbls. per day at a meeting of producers held in Tulsa, Tuesday, July 15, subject to the approval of the State Corporation Commission. The report of the statewide proration committee of the Mid-Continent Oil and Gas Association, headed by C. C. Herndon, vice president of the Skelly Oil Co., with its recommendations of a further cut in production of crude in the State was adopted without dissent.

The brunt of the reduction will fall on the flush and semiflush fields and it is hoped that the plan will make it possible for those purchasers who have been obliged to cut their crude runs in old fields to resume 100 per cent purchases in the old settled areas.

The action taken at the nationwide meeting of refiners on June 30 in New York, in deciding upon a reduction of crude runs to stills in order to save the industrial situation, was heartily commended by every speaker at the meeting in Tulsa, and the fact that the refiners threw back upon the producers a certain proportion of crude, was accepted and a hearty spirit of co-operation was expressed by the men who represented the producers of oil.

The State Corporation Commission will be asked to approve the action of the meeting and to issue an order amending its own order issued late in June so that the new plan may be put into effect. The commission's old order affects September, but the proration committee hopes that by September conditions will improve sufficiently to resume the commission's old schedule in that month.

Chairman Herndon announced that the purchasing companies were working hand in hand with producers in an effort to maintain a balance between supply and demand.

J. S. Fitzpatrick, chairman of the board of the Prairie Oil & Gas Co., said that while he could not promise that his company would immediately resume 100 per cent purchases in the old fields, he hoped the success of the new plan would make it possible for the Prairie to go back to its old purchasing schedule in the areas of small production in a short time. Mr. Fitzpatrick said the Prairie Pipe Line Co. is connected with about 50,000 old wells in Oklahoma.

The following table shows the potential and allowable production of the State under the plan adopted Tuesday:

POTENTIAL AND ALLOWED PRODUCTION—STATE OF OKLAHOMA PRORATION SCHEDULE JULY 15, 1930, TO SEPTEMBER 1, 1930

	July		August	
Production Allowed—50%:	Estimated potential	Estimated production	Estimated potential	Estimated production
Allen (Wilcox)	8,212	4,106	6,650	3,325
Allen (Cromwell)	18,970	9,485	17,880	8,940
Bowlegs	30,070	15,035	29,154	14,577
Carr City	10,919	5,460	10,814	5,407
Earlsboro (old)	29,311	14,655	28,698	14,349
Earlsboro Townsite	10,820	5,410	8,100	4,050
Little River	49,070	24,535	47,440	23,720
East Little River	20,541	10,271	19,000	9,500
Marshall-Lovell	6,000	3,000	5,820	2,910
Maud	6,070	3,035	6,074	3,037
Mission	15,756	7,878	15,243	7,622
Sasakwa	10,769	5,385	9,720	4,860
Searight	14,031	7,015	13,808	6,904
Seminole	30,329	15,164	29,387	14,693
East Seminole	4,405	2,203	4,273	2,137
St. Louis	40,439	20,219	38,800	19,400
Sub-total	305,712	152,856	290,861	145,431
Production Allowed—25%:				
East Earlsboro	50,323	*15,000	40,000	*15,000
South Earlsboro	43,723	10,931	35,000	8,750
Sub-total	94,046	25,931	75,000	23,750
Production Allowed—18¾%:				
West Asher-Wanette	19,765	3,706	15,000	2,813
Konawa (adjusted)	100,000	18,750	80,000	15,000
Miscl. (Chandler et al)	20,000	3,750	28,000	5,250
Sub-total	139,765	26,206	123,000	23,063
Oklahoma City	600,000	84,007	600,000	94,756
Wells, in prorated areas, not prorated	10,000	10,000	10,000	10,000
Total—Prorated areas	1,149,523	299,000	1,098,861	297,000
Outside areas—not prorated	251,000	251,000	253,000	253,000
Total State	1,400,523	550,000	1,351,861	550,000

*Minimum.

Hobbs Pool Will Be Sanely Developed

State Authorities and Operators Agree to Necessity of Curtailing Production in Important New Mexico Field

By L. G. E. Bignell
Petroleum Engineering Editor

ROSWELL, N. Mex., July 14.—Profiting by past experiences in operating oil pools in the Permian Basin areas of West Texas, and assisted by the hearty co-operation of the State officials of New Mexico, the major companies operating in the Hobbs area in Lea County, New Mexico, are banding together to drill and produce oil in that district in an orderly and economical manner.

Dr. Austin D. Crile, land commissioner for New Mexico, announces that the State of New Mexico and the 24 operators of the Hobbs oil area have entered into an agreement to prorate production based largely upon the proration agreements of the Yates and Winkler districts of Texas, and this agreement will be put into effect immediately and will be beneficial to the State, operators in the Hobbs Field and the industry as a whole.

A meeting of the executive committee of operators and the State land officials is called for Friday, July 18, at Roswell to ratify the details of this agreement and because of the fact that the 24 active operators now control practically all leases upon what appears to be the Hobbs structure it is felt that when confirmed the future production of this area will be under definite and satisfactory control.

Change of Sentiment

Last October, at a public meeting held in Roswell, the commissioner of lands refused the request for a shutdown in the following words: "The commissioner of public lands of New Mexico feels that it is his clear duty to insist on an orderly development and production of the leases held by the operators and producers in the Hobbs area. So long as this State produces but a small part of its consumption no scheme of prorating or shutting in could properly apply. It is evident that only in those sovereign states where production far exceeds their consumption would it be equitable to enforce any curtailment of production."

The commissioner of public lands now states that because the potential production of Hobbs with 26 wells completed is about 148 000 bbls. per day and with 53 wells drilling, rigging up and located, it is predicted this production will exceed 500,000 bbls. daily within four months, the need for conservation of these resources is very urgent and he therefore now recommends proration as a means of effectively controlling the output of the field.

This will be equitable and to the best interests of the State of New Mexico and all operators large and small, as well as beneficial to those receiving royalties on this oil which includes several State institutions.

It is also felt that such a movement will maintain a uniform price for this crude oil which will aid in establishing a large permanent fund for New Mexico's public institutions.

Conservative Operating

The commissioner further maintains that the field should be managed from the best possible knowledge of petroleum engineering to recover every barrel of oil possible, and conserve the gas energy and past experience in other similar fields has shown that proration properly enforced will do all these things. He also points out that conservation in Hobbs will permit the further search for oil in New Mexico and the opening of other pools as well as conserve the price and make possible the continuation of other fields like that at Artesia.

The executive committee for the producing companies, composed of J. P. Cusack, Skelly Oil Co., who aided in establishing proration in Wink and Yates Pools; E. G. Allen, Shell Petroleum Corp.; L. E. Barrows, The Texas Company; J. R. Suman, Humble Oil & Refining Co.; Warner Clark, California Co.; H. C. Bretschneider, Midwest Refining Co.; and Harry W. Walker, Walker Oil Corp., agree with Doctor Crile. C. G. Staley, New Mexico State geologist, agrees with these statements and to that end all are working diligently to bring about proration immediately.

40-Acre Unit Plan

It is planned to operate the pool upon the basis of 40-acre units and prorate the oil 25 per cent upon acreage covered by these units and 75 per cent upon the average daily potential production of each unit. This is similar to the Yates plan except that at Yates the units are 100 acres each.

With 22 units now productive in the Hobbs Pool this would give each well a run of about 415 bbls. daily, based upon acreage, and about 1,175 bbls. daily based upon the 75 per cent run to make up the total of 35,000 bbls. per day that this field will run to pipe lines. These figures are subject to change every 15 days as new wells are added and new units come within the producing area of the field.

Pipe Line Outlets

At this time the outlet from the pool is through three pipe lines. The Shell Pipe Line Co. has a 6-inch line from Hobbs, through Jal, that connects with the Texas Pipe Line Co.'s line near the border of the State. The Humble Pipe Line Co. has an 8-inch line to Monahan, Tex., and the Atlantic Pipe Line Co. has an 8-inch line to Midland, Tex.

The Shell Pipe Line Co. will have a line that starts in the Hobbs Field and connects with the Texas Pipe Line Co.'s 8-inch line in Section 19-22s-36. This is 24 miles from Texas (near the New Mexico-Texas border). This Texas Pipe Line Co. line joins its main system at Wink, Tex.

The Atlantic Oil Producing Co. has an 8-inch line from its tank farm at Midland, Tex., and the Humble Pipe Line Co. also has an 8-inch line that connects with its main system at Monohans, Tex.

These three transportation companies will be required to handle whatever oil is shipped out of New Mexico from the Hobbs and Jal districts, at least for some time to come, for it hardly seems logical to assume that either the Gulf Pipe Line Co. or the Illinois Pipe Line Co. will extend their lines into New Mexico in the near future.

The Illinois Pipe Line Co. line has been built into the Yates Pool principally to serve that district although it does have a branch line north to McCamey and Crane fields. With the large potential in the Yates Pool it does not seem reasonable to assume that it would extend this line farther north for the purpose of transporting and purchasing oil from the New Mexico fields.

About the same condition exists so far as the Gulf Pipe Line Co. is concerned for its line is now serving Hendricks, McIlroy, Judkins, Crane and McCamey Fields and it has a lot of shut-in oil in those fields as well as thousands of acres of undrilled leases and is therefore not in urgent need of oil from other sources.

These five lines, Shell-Texas, Atlantic, Humble and the Gulf and Illinois are the only pipe lines in the West Texas area that move oil eastward, although the Pasotex line runs 20,000 bbls. daily to El Paso, Tex., but the outlet for oil in that direction is very limited.

Future pipe lines into this district will be influenced largely by the ultimate potential of the field and the need for this oil by the refineries and it is anticipated that as this need increases pipe line facilities will be made available to meet it.

The mechanical means of controlling the amount of oil each well will make is secured by tubing the wells and at this time practically every well in the field is producing through tubing and that tubing is choked or beaned so that the gas oil ratio is about 700 feet of gas per barrel of oil.

Field Practices

A meeting of the production men was held recently at which time all production problems were discussed and while no definite rules were adopted there was a very general agreement among them as to the best means of handling these wells for fortunately their past experience has largely been along parallel lines in other Limestone areas.

Casing practices were also discussed and in the future the casing points will be determined largely by geological data secured as the wells are drilled and the casing so set as to conserve all gas possible.

It is also agreed that there shall be only one well in each unit drilled to each producing horizon. There are two pays now known, one at about 3,100 feet, where a sand is found and "sweet" oil produced, and the other at about 4,100 feet in the Dolomite from which sulphur oil is flowing.

The area in which it is anticipated that oil will be found is about 40 per cent on State-owned land the balance on patented land secured from the Federal Government by homesteading.

The north end of the structure is looking the most promising for wells ranging from 8,000 to 26,000 bbls. potential have been drilled and it therefore seems quite conservative to estimate the potential of this area as 500,000 bbls. within four months with over 50 operations now under way.

But with the program as now outlined well under way and harmony existing between all interests whether State, operating company or royalty owner it is predicted that the Hobbs area will not influence the market price of oil and all oil will be recovered in an orderly and economical manner.

Hobbs Held Back Until May

The production of the Hobbs Pool in the week ending July 12 averaged 27,766 bbls. per day from 25 wells. Thirteen of the wells were pinched in and two were entirely shut in. The largest production came from the Shell Petroleum Corp.'s No. 1 McKinley in Section 19-18-38, which averaged 6,619 bbls. per day. The same company's No. 1 State, Section 32-18-38, averaged 4,432 bbls. per day. Both were pinched in. The Humble Oil & Refining Co.'s No. 1 Bowers in Section 30-18-38 made 5,813 bbls. a day, also pinched in, and the Gypsy Oil Co.'s No. 1 Grimes, Section 31-18-38, was allowed to make only 2,350 bbls. a day.

The production of the combined southeastern New Mexico pools last week averaged 31,846 bbls., all but 700 bbls. of which came from Lea County. It was the largest production the field has yielded thus far.

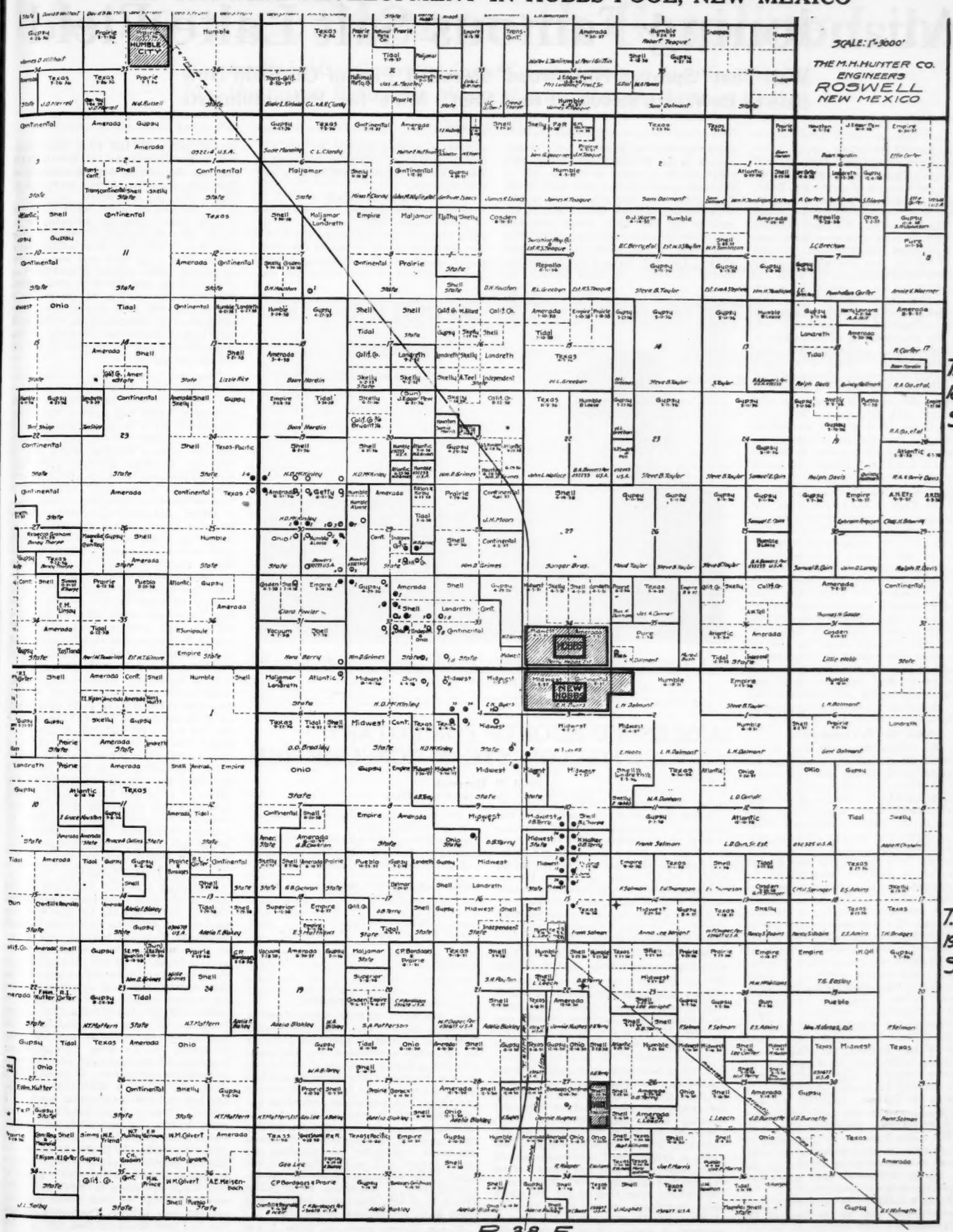
The Hobbs Pool was held back until recently by absence of pipe line facilities, and not until May did it begin to produce

(Continued on Page 152)

RECORD OF LEA COUNTY, NEW MEXICO, POOLS, WEEK ENDING JULY 12

Company, lease—	Location	No. of wells	Pinched or op n	Daily average prod.	Run by
HOBBS AREA					
Amerada, McKinley	30-18-38	2	Pinched	711	Atlantic P. L. Co.
Getty, McKinley	30-18-38	1	Shut in	142	To storage
Gypsy, Grimes	31-18-38	1	Pinched	2,350	Humble P. L. Co.
Humble, Bowers	30-18-38	1	Pinched	5,813	Humble P. L. Co.
Midwest, Capps	3-19-38	1	Pinched	37	Atlantic P. L. Co.
Midwest, Leech	15-19-38	1	Pinched	46	Atlantic P. L. Co.
Midwest, State	9-19-38	1	Pinched	36	Atlantic P. L. Co.
Midwest, State	10 & 15-19-38	4	Pinched	98	Atlantic P. L. Co.
Midwest, Terry	10-19-38	1	Pinched	17	Atlantic P. L. Co.
Ohio, State	9-19-38	1	Pumping	20	To storage
Ohio, Northrup	32-18-38	1	Shut in	None	Shell P. L. Co.
Prairie, Crump	15-19-38	2	Pinched	125	Atlantic P. L. Co.
Prairie, Selman	15-19-38	1	Shut in	None	Atlantic P. L. Co.
Shell, McKinley	19-18-38	1	Pinched	6,619	Humble P. L. & Shell
Shell, State	32-18-38	1	Pinched	4,432	Humble P. L. & Shell
Shell, Thrope	10-19-38	1	Choked	94	Shell P. L. Co.
Texas Pacific, State G	24-18-37	1	Pinched	1,608	Humble P. L. Co.
Tidal, Grimes	29-18-38	1	Pinched	439	Atlantic P. L. Co.
Walker, Terry	10-19-38	2	Pinched	219	Atlantic P. L. Co.
Total		25		27,766	
JAL AREA					
Continental, McCallister	24-26-36	1	Shut in	....	No connection
Continental, Wells	11-25-36	1	Shut in	....	Humble P. L. Co.
Cranfill & Reynolds, Wilson	23-25-36	1	Pumping	19	Texas P. L. Co.
Empire, Lindley	14-25-36	1	Pinched	145	Humble P. L. Co.
Humble, Koonce	14-25-36	1	⅛-in. ch.	83	Humble P. L. Co.
Humble, Lindley-A	13 & 23-25-36	2	⅜-in. ch.	425	Humble P. L. Co.
Humble, Lindley-B	14-25-36	1	¼-in. ch.	124	Humble P. L. Co.
Magnolia, Lindley	26-25-36	1	Pumping	40	Humble P. L. Co.
Milwest, Gregory	31-25-36	1	Pumping	87	Texas P. L. Co.
Skelly, Joyner	26-25-36	1	Pumping	100	Humble P. L. Co.
Texas, Rhodes	22-26-37	1	Shut in	None	Texas P. L. Co.
Texas, Shepherd	6-26-37	1	¼-in. ch.	296	Texas P. L. Co.
Total		13		1,319	
LEA AREA					
Continental, State	1-21-33	2	Pumping	80	Texas P. L. Co.
Cranfill & Reynolds, State-B	2-21-33	3	Pumping	2,499	Texas P. L. Co.
Henderson & Dexter, Jewett & McDonald	18-20-34	1	Pumping	45	Texas P. L. Co.
Snowden & McSweeney, State	1-21-33	1	Pumping	25	Texas P. L. Co.
Texas, Lynch	34-20-34	1	Pumping	914	Texas P. L. Co.
Texas, State-A	2-21-33	2	Pumping	2,134	Texas P. L. Co.
Texas, State-B	1-21-33	1	Shut in	....	Texas P. L. Co.
Total		11		5,697	
OTHERS					
Continental, Lockhart	31-21-36	1	Shut in	....	No connection
Continental, Meyer	17-21-36	1	Shut in	....	No connection
Empire, Closson	6-22-36	1	Flowing	95	Texas P. L. Co.
Empire, State-B	8-21-35	1	Shut in	....	To storage
Texas Pacific, State	21-23-36	2	Flowing	275	Texas P. L. Co.
Vacuum, State	13 & 14-17-34	1	Shut in	....	
Total		7		370	
Grand total		56		31,846	

MAP SHOWING DEVELOPMENT IN HOBBS POOL, NEW MEXICO



The Hobbs Pool, in Lea County, New Mexico, as far as it has been developed. It is estimated that the Hobbs area could produce 500,000 bbls. a day in a short time if there were need for the oil. The enormous potentiality of the field made it a menace to the oil industry and the producers and other lease owners in the area, with the approval and co-operation of the New Mexico State government have made plans to curb production to a point where it will be level with pipe line capacity and requirements.

Abandoning Famous Salt Lake Field

Well That "Sprayed Hollywood" Recalled. Part of Oil Field Now Said to Be Worth $5,000 a Front Foot. Mine for Paleontologists

By L. P. Stockman

LOS ANGELES, Calif., July 12.—Twenty years ago the Salt Lake Field of Los Angeles Basin was contributing its share to the romance of petroleum. Today it is giving way to the march of progress and within a very short time many will have forgotten of its existence, notwithstanding it yielded a number of large flowing wells during its early life. The Associated Oil Co. has just abandoned its Salt Lake lease containing 60 wells and is scheduled to write finis to its operations in this field within a short time thereafter. It will be with considerable reluctance that many old-timers will watch the abandonment of production in this field which not so long ago was away "out in the sticks." Today it is located in the midst of a rapidly growing section of Los Angeles and within a short time the old wooden rigs will be replaced with apartments and residences. The Associated's leases in this field expired on June 30 and the property, valued at approximately $100,000 per acre, is too valuable from a realty standpoint to justify a renewal.

Drilling operations were started in the Salt Lake Field in the late nineties, but it was not until about 1902 that the first commercial producer was successfully brought in. Prospectors were attracted to this district by an extensive brea pit located out on the Hancock ranch along a country road that is now Wilshire Boulevard. These brea pits proved immensely valuable not only because this asphalt seepage indicated the proximity of what ultimately proved to be rich underlying oil sands but also because these old asphalt beds proved a veritable mine for paleontologists and historians as they contained an almost inexhaustible supply of skeletons and bones of prehistoric animals imbedded in the deposit.

Mine for Paleontologists

W. W. Orcutt, vice president of the Union Oil Co. of California, who was instrumental in initiating this exploration work, uncovered and removed numerous skulls, bones and vertebrae of prehistoric animals which were subsequently forwarded to the Leland Stanford University at Palo Alto for identification and display. No specimens of the kind had previously been found in the United States up to that time and the matter was deemed of such historical value that Hancock turned over the brea beds for research purposes. Several complete skeletons, some of which measured 16 feet in length, were recovered, and it is remarkable that in several instances every bone of the skeleton was found intact. Approximately 300 complete skeletons of saber tooth tigers, mastodons, elephants, bisons, horses, wolves, foxes and innumerable small animals were recovered. A very complete display of these prehistoric and extinct animals is on display in the museum at Los Angeles, the Smithsonian Institute, University of California at Berkeley, Stanford University at Palo Alto, as well as several institutions of learning in Europe. Most of the surrounding property has been subdivided and Allen Hancock, the owner, after deeding the major brea pit to the county of Los Angeles, is contemplating the erection of a museum to be erected on the site as part of a public park which surrounds the original brea pits.

The Salt Lake Field occupies a tract of nearly flat land at the foot of the Santa Monica Range but distant approximately 2 miles from the base of the mountains, which lie to the north. West of the main group of wells, a low ridge makes off from the Santa Monica Mountains in a southeasterly direction or at right angles to the mountain axis. A secondary group of wells is located on this ridge, which is known as the Beverly or Sherman section of the Salt Lake Field. This group does not lie exactly in line with the original Salt Lake Field, as the axis of the Salt Lake group intersects the Beverly ridge approximately 2,500 feet north of the center of the latter group. The Salt Lake Field is peculiar among California oil fields because the surface is entirely covered by late sediments so that no indication whatever of subsurface conditions is reflected by surface contours.

Early Big Wells

Early records indicate the completion of several large wells, especially in the main group of the Salt Lake Field. On the Arcturus lease, on which the Associated abandoned 25 wells several years ago preparatory to subdivision for residential purposes, the first completion, No. 1 Arcturus, came in flowing 2,000 bbls. per day. No. 4 Arcturus, completed February 22, 1905, showed an initial of 15,000 bbls. per day which, incidentally, is not equaled by many wells in newer prolific fields. No. 35 Arcturus, originally finished flowing 1,000 bbls. per day from 2,200 feet, was subsequently deepened to 2,607 feet and recompleted in August, 1906, making 20,000,000 feet of natural gas and 500 bbls. of oil daily. This well blew in out of control at 1 a.m. August 20, 1906, and is facetiously referred to by old-timers as "The well that ruined Hollywood" because of the spray of oil which was carried in the air for several miles.

J. E. Koeberle, Bert Adams, William Phillips and Jake Hanst posed for this picture in 1904. This section of the Salt Lake Field (Wilshire Boulevard and La Brea Avenue) commands $5,000 per front foot.

Upon conclusion of abandonment work on the Salt Lake lease by the Associated Oil Co., there will only remain a few operators. These will include The Texas Company's Niles lease containing seven wells, the Garbutt Oil Co. with two wells and the Gilmore Oil Co., which has 14 wells on fee-owned acreage. The Associated abandoned its first group of producing wells in the Salt Lake Field in 1924, at which time property values greatly offset production possibilities. As a result of this condition, the Hancock interests paid the Associated a flat sum predicated on probable ultimate production to cease operations so that the acreage in question might be subdivided. At that time the Associated abandoned approximately 60 holes on one section of the Salt Lake lease. The Rancho La Brea Oil Co. had previously abandoned 45 holes following similar abandonment work by the Southern California Edison Co. involving 46 former producers.

It is interesting to note while commenting on the present status of this area that the Salt Lake Field once boasted of the deepest hole in California. This was the Union Oil Co.'s No. 1 Rosemary, which was carried down with standard tools to 5,594 feet before abandonment in 1910. Production of the Salt Lake Field has been consistently declining over a period of years and has dropped to such an extent that the lifting cost in several instances is almost prohibitive from an economic standpoint. All producing wells in the field at present are pumpers making a few barrels each per day.

First Production

Production was first developed on the Associated's Salt Lake lease along about 1906 by the Salt Lake Oil Co. and was marketed in southern California through the use of 59 trailer wagons, each drawn by four mules. The Associated subsequently bought a 49 per cent interest in the property and ultimately acquired complete control, the total consideration being somewhere around $3,500,000. It is rather difficult to conceive that a few years ago oil wells were pumping on the four corners of what is now Wilshire Boulevard and La Brea Avenue, where property values at present are in excess of $5,000 per front foot. E. Clem Wilson of the old Wilson & Willard Supply Co. has just finished construction work on a modern 12-story limit height Class A office building on one of these corners, which a few years ago contained a small producing well. J. E. Koeberle, a Los Angeles petroleum engineer who became interested in the activities of a group of Salt Lake operators in 1905 and 1906, was responsible to some extent for subsequent deep drilling. Previously production had been developed from 800 to 1,200 feet until he deepened one of the shallow wells located on property of the Rancho La Brea Oil Co. to 1,700 feet and brought in a 1,500-bbl. well. This led to a general deepening program throughout the field.

SUGGESTED HOOKUP FOR ROTARY WITH LOW STEAM CONSUMPTION

By J. T. Hayward
Engineer, Shell Petroleum Corp., Tulsa.

It not infrequently happens that the success of a competing type of machine, leads to improvements in the older types, the design of which had appeared to be more or less final. At sea the encroachment of the oil engine, stimulated the development of the high pressure geared turbine to such an extent, that steam installations of this type now approach very closely in thermal efficiency their internal combustion rivals.

The steam driven rotary has long held almost undisputed sway in the drilling field.

There are many directions in which improvements might be made. The present article will be confined to only one of these, but it is one which the writer believes will lead to very large reductions in steam consumption.

In what follows average conditions on a 6,000-foot Mid-Continent well are considered. In the course of a 24-hour day the pump will run around 19 hours developing about 200 horsepower (Mid-Continent conditions of course) at the fluid end. The engine will run 19 hours under a drilling load developing say 40 brake horsepower, and five hours pulling out and handling drill pipe. Stop watch observations show that of the five hours spent in pulling out and changing pipe, at the most, 25 per cent of the time is occupied in actual lifting during which time the engine will be developing around 350 brake horsepower and for the remainder of the five hours it will average at the outside 10 horsepower. This gives a total of 480 horsepower hours developed in the five hours during which the engine is handling pipe.

Summarizing, the following will be the horsepower hours developed by the engine and pump during a representative day:

Table 1—H.P. Hours Developed at Steam Driven Rotary

	H.P. hrs.	H.P. hrs.
Pump 19 hrs. at 200 h.p.		3,800
Engine 19 hrs. drlg. at 40 h.p...	760	
5 hrs. handling pipe....	480	
Engine total	1,240	1,240
Rig total		5,040

Power Consumption

In passing it may be worth drawing attention to the fact that power consumption, of drilling operations, cannot be accurately determined from the wattmeter or ammeter readings of alternating current induction motor-driven rigs. These instruments show the input to the motor and the output cannot be arrived at unless the speed is also known. During drilling, to give an instance, the drilling motor is often run at one-half synchronous speed, and under this condition the power output will be less than half the input. The armature driven by the revolving field is analogous to a pulley driven by a belt, the power loss in both cases being proportional to the slip.

If the figures given in Table 1 are correct, they indicate that the pump develops during the 24 hours three times as many horsepower hours as the engine.

If, instead of horsepower hours devel-

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Announce Mammoth Gasoline Line

Barnsdall and Continental Join In Construction of Line Connecting Mid-Continent Refineries With Middle Western Market Outlets

Organization of the Great Lakes Pipe Line Co., a corporation sponsored by Continental Oil Co. and the Barnsdall corporation for the purpose of constructing a 1,350-mile gasoline pipe line from Oklahoma refineries to Chicago and other points in the Great Lakes region at a cost of $12,000,000 was announced Wednesday by officials of the new company.

Officials who will direct the Great Lakes Pipe Line Co. are E. B. Reeser, chairman of the board; D. J. Moran, president; Harry Moreland, vice president and general manager; F. E. Richardson, chief engineer, and H. A. Ward, secretary and treasurer. For the present offices will be maintained at Ponca City, Okla.

Although the line is being built primarily to serve Continental refineries at Ponca City and Sapulpa, Okla., and Barnsdall plants at Okmulgee and Barnsdall, Okla., it is understood that it may serve other refineries located in the Mid-Continent Field and enable them to send their products to the Lakes region and intermediate points.

According to Great Lakes company officials, careful preliminary investigation reveals that the new line will enable Mid-Cantinent refineries to transport gasoline into Chicago and surrounding points at a saving sufficient to allow them to market their products on an even basis with companies who operate manufacturing units there.

Start Laying Line

A tentative survey of the route to be taken by the line was completed recently and actual surveying began on July 11. The laying of pipe is expected to begin on August 15, or sooner, and it is planned to have the line completed in time to move 1931 business. The main line will begin at Barnsdall, Osage County, Oklahoma, and proceed direct to Kansas City, and still farther north to Des Moines, Iowa. At Des Moines the line will be split, a line being laid to Chicago and a line to Minneapolis. Later on, additional lines from Chicago to Milwaukee and from Des Moines to Omaha will be laid. According to present estimates, this line will be a 30,000-bbl. system.

It is planned to establish pump stations along the lines at 50-mile intervals in order to maintain constant pressure and move gasoline to its destination with all possible dispatch. Pump stations will also serve as terminal points. From these plants it will be possible to serve company stations or dealers within a 50-mile radius by the use of tanks and tank trucks at a saving over railway rates. In this manner it will be possible to give quicker and more economical service to smaller points as well as the main re-shipping cities. At Kansas City, Des Moines, Chicago, Minneapolis, Milwaukee and Omaha, gasoline can be re-shipped economically by tank car to surrounding territories.

Tentative plans for the line were made by the Barnsdall corporation six months ago, but the final agreement between Continental and Barnsdall was reached less than a month ago.

This will be America's pioneer pipe line of this type and it is predicted it will open up many possibilities for the future. Among these possibilities would come small branch lines leading from the main line to bulk storage within a given territory, thus permitting favorable marketing costs.

To Enlarge Facilities

The building of the line will enable both the Barnsdall and Continental companies to enlarge their marketing facilities in the middle western states. Both companies now have bulk and service stations in that territory. The Continental, which for years has been the largest marketer of petroleum products in the Rocky Mountain states, also has a large number of stations in the Southwest and East.

The Ponca City refinery has a crude oil capacity of 30,000 bbls. daily and the Sapulpa refinery 10,000 bbls. daily. The latter plant has been operated at part capacity since it was acquired by the Continental due to the lack of favorable outlets for the refinery products.

The Barnsdall refinery at Okmulgee has a capacity of 11,000 bbls. daily and that at Barnsdall 5,000 bbls. The company also has a 5,000-bbl. refinery at Wichita, Kans. The refining capacity will be enlarged to take care of expansion in marketing facilities.

The Great Lakes gasoline line is the third to be announced recently. The Phillips Petroleum Co. has started construction on a line extending north from its Borger, Tex., refinery through Kansas and Missouri, terminating near St. Louis. The Susquehanna Pipe Line Co. (Sun Oil Co.) has let contracts for a gasoline line covering Pennsylvania points from its Marcus Hook, Pa., refinery.

Investigate Hydrogenation Process

Representatives of Major Refining Organizations Affiliated With Hydro Patents Co. Leave for Germany. Announce New Organization

Pursuant to plans announced several weeks ago, Standard-I. G. Co., the holding company for the patent rights of the Standard Oil Co. of New Jersey and I. G. Farbenindustrie Aktiengesellschaft of Germany relating to hydrogenation, has transferred these patents for the United States to the Hydro Patents Co., a newly organized Delaware corporation.

The shares of Hydro Patents are held by the following United States Oil Refining interests: Atlantic Refining Co., Barnsdall Corp., The Cities Service Co., Continental Oil Co., Mid-Continent Petroleum Corp., Pure Oil Co., Shell Union Oil Co., Sinclair Refining Co., Skelly Oil Co., Standard Oil Co. of California, Standard Oil Co. (Indiana), Standard Oil Co. of New Jersey, Standard Oil Co. of New York, Standard Oil Co. (Ohio), The Texas Company, Union Oil Co. of California and Vacuum Oil Co.

The share holdings of all of these companies, including the Standard Oil Co. of New Jersey, are in proportion to their crude running capacities, with a minimum holding of 500 shares. Control of these patent rights within the United States therefore passes to the prospective users of the process.

To Visit Germany

A group of 12 oil executives, headed by Frank A. Howard, president of the Standard-I. G. Co., will sail for Germany on the Bremen at midnight Wednesday to make an intensive study of the work on the hydrogenation process being done by the I. G. Farbenindustrie A. G. there. They will be abroad for about a month.

The party consists of Dr. H. M. Weir, Atlantic Refining Co.; E. W. Isom, vice president, Sinclair Refining Co.; R. A. Halloran, Standard Oil Co. of California; Dr. R. E. Wilson, development head of the Standard Oil Co. (Indiana), and William Plummer of the same company; Dr. J. B. Rather, Standard Oil Co. of New York; S. J. Dickey, consulting engineer of the General Petroleum Co.; J. Stewart Harrison, vice president, Standard Oil Co. (Ohio); R. J. Dearborn and Michael Halpern of The Texas Company; A. G. Page, Union Oil Co. of California, and Mr. Howard. Representatives of several other companies interested will join the party in Germany.

The group represents the majority of the companies announced yesterday by the Standard Oil Co. of New Jersey as participating with them in Hydro Patents Co., the new organization formed to take over rights to the hydrogenation process in the United States.

Their observations abroad will be in accordance with plans to study the operation of the process both in Germany and in the Standard's new hydrogenating plant soon to be started at its Bayway, N. J., refinery. Upon the results of this study will very largely depend the extent to which the individual companies forming Hydro Patents will undertake the future commercial application of the process.

In regard to future development, the New Jersey Standard has issued the following statement:

"The oil companies which have taken participation in the Hydro Patents Co. will during the coming year make intensive investigations of the new process in the United States and in Germany to determine its bearing upon their individual operations, following which investigations they will have the option of taking licenses for the practice of the new process from the Hydro Patents Co. on a predetermined basis.

"It is expected that the Hydro Patents Co. may later offer licenses and perhaps additional stock to other oil companies desirous of using the process, particularly when and if the process shall have been so far developed as to be capable of profitable application in plants of smaller size than those which now seem the minimum. These questions, and all other questions with relation to the future policy of the company, however, remain to be determined by the stockholders.

"In view of the direct bearing of the hydrogenation process upon the question of conservation of oil supplies, and its effect of lifting the average quality level of gasoline, kerosene, lubricating oil, fuel oil, Diesel oil and other principal petroleum products, it may safely be assumed that the policy of the company will be dictated by the interests of the industry in general.

"The total daily crude running capacity of the stockholders of Hydro Patents is 2,363,700 bbls. While the total listed daily capacity of the United States oil industry is 3,765,585 bbls., about 20 per cent of this is in small units, or in so-called "skimming plants" which have never been in a position to employ the more intensive complete refining methods upon which the industry rests.

"In substantial part the output of these units of the industry has been used as raw material in the plants of the larger companies in which complete refining is carried out. The companies which have taken over the control of the hydrogenation process therefore represent at least 80 per cent of the refining capacity of the United States potentially available for the adoption of the hydrogenation method."

AUTOMOTIVE TRANSPORTATION COMMITTEE APPOINTED BY A.P.I.

NEW YORK, July 15.—Appointment of a Committee on Automotive Transportation has been announced by the American Petroleum Institute's Division of Production. The chairman is R. F. Fike, Mid-Continent Petroleum Corp., Tulsa, Okla., and D. V. Stroop, American Petroleum Institute staff, is secretary.

Chairman Fike has suggested three general divisions for investigation and recommendation: Standardization of equipment and codes of recommended practice and manuals for drivers, and care and loading of vehicles; legislative regulations, and general.

Members of the new committee are: E. L. Bell, Deep Rock Oil Corp., Drumright, Okla.; J. C. Bennett, Associated Oil Co., San Francisco; R. J. Bevington, Barnsdall Oil Co., Barnsdall, Okla.; S. C. Bovell, Magnolia Petroleum Co., Dallas; R. W. Bozeman, Shell Oil Corp., Los Angeles; Charles Earle, Prairie Pipe Line Co., Tulsa; S. H. Grinnell, Union Oil Co. of California, Los Angeles; H. H. Hall, Standard Oil Co. of California, San Francisco; T. S. Harris, Continental Oil Co., Ponca City, Okla.; F. A. Jones, Shell Petroleum Corp., St. Louis; A. L. Knipping, General Petroleum Corp. of California, Los Angeles; C. H. McBinney, Transcontinental Oil Co., Tulsa; A. L. McMillan, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; C. J. Martin, Phillips Petroleum Co., Bartlesville; R. S. Mayo, Gypsy Oil Co., Tulsa; C. M. Nerber, Carter Oil Co. Tulsa; S. C. Phillips, Sinclair Oil Co., Tulsa; H. E. Spear, The Texas Company, Houston; W. R. Styron, Humble Oil & Refining Co., Houston; C. F. Walker, Skelly Oil Co., Tulsa; and C. L. Wheatley, The Empire Companies, Bartlesville.

Representatives from these companies are to be appointed: The Texas Company (California), Los Angeles; Richfield Oil Co., Los Angeles; and Standard Oil Co. of Louisiana, New Orleans.

Definite plans for carrying out the work of the committee will be discussed at the annual meeting of the Institute at Chicago in November. It also is proposed later to appoint two sub-committees on automotive transportation, one a central group composed of all members residing in the Mid-Continent area and the other a Pacific Coast group to include all members residing in that area.

Adopt Contract for Casinghead Gas

Natural Gasoline Association of America Approves Uniform Agreement Perfected by Special Committee After Long Investigation

Culminating over a year of intensive work on the part of a special committee, the board of directors of the Natural Gasoline Association of America in a meeting held at the Tulsa headquarters last week approved a standard contract for the purchase of casinghead gas from producers. The contract already has been placed in effect by several of the major buyers and sellers of gas for processing in natural gasoline plants and it is expected that the new agreement will be generally accepted by the industry.

As one important phase of its activities the Natural Gasoline Association of America for several years has been considering the feasibility of working out a standard contract which would be acceptable to both buyers and sellers and eliminate the lack of uniformity and obvious inconsistencies which have been characteristic of past transactions. Terms of agreements in the past generally reflected the supposed exigencies at the time the contracts were made and usually worked a hardship on the buyer or seller before the contracts expired.

A committee headed by T. R. Goebel of the Skelly Oil Co., chairman, and J. W. Cowles, Shell Petroleum Corp., vice chairman, has made exhaustive investigations of the problem with the view of being fair to all concerned. The views of the crude oil producers who secure the casinghead gas as a by-product of their well operations was secured along with those of the natural gasoline manufacturers who buy the gas.

It was necessary to iron out many disagreements covering special phases of the contract. The contract as approved covers every detail of the usual agreements. The committee membership, which includes several of the largest operators in the Mid-Continent Field, was as follows: R. B. Daugherty, Barnsdall Oil Co.; S. J. Fraser, Prairie Oil & Gas Co.; M. T. Kirk, Phillips Petroleum Co.; C. A. Franks, Amerada Petroleum Corp.; A. B. Morris, Forrest E. Gilmore Co.; E. C. LeFevre, Empire Oil & Refining Co.; C. L. Pitcher, The Texas Company; T. G. Rheinberge, Sinclair Oil & Gas Co.; D. C. Williams, Continental Oil Co., and J. R. Freeman, Carter Oil Co. These men are in direct contact with gas purchases or sales of their companies. Following is the contract as approved by the association:

CASINGHEAD GAS CONTRACT

This agreement, made and entered into this ..... day of ....., 19.., by and between ....., hereinafter referred to as the "seller," and ....., hereinafter referred to as the "buyer."

Witnesseth:

Whereas, seller owns and holds a certain valid and subsisting oil and gas mining lease covering the following described lands situate and being within the County of ....., State of ....., to-wit: and,

Whereas, seller is operating the above described properties and certain wells on said lands are productive, or may be productive, in addition to oil, of what is termed casinghead gas (it being understood that the term "casinghead gas" means the gas issuing from oil wells whether produced from the same sand or strata from which the oil is produced or by the induction of gas with compressors or other means for flowing the oil), and the seller desires to sell the casinghead gas which may hereafter be produced from oil wells located on said premises; and,

Whereas, buyer contemplates the construction of, or has in operation, a gasoline plant in the vicinity of said property and desires to buy said casinghead gas;

Now, therefore, in consideration of the sum of one ($1) dollar paid by the buyer to the seller, receipt of which is hereby acknowledged, and other payments and covenants hereinafter specified, the seller hereby grants, bargains, sells and agrees to deliver to the buyer and the buyer agrees to purchase and take from the seller, subject to the stipulations and conditions hereinafter specified, all the casinghead gas now or hereafter produced from the wells on the lands hereinabove described.

Purpose

1. The gas hereby sold is conveyed to the buyer for the purpose of manufacturing therefrom gasoline or such other

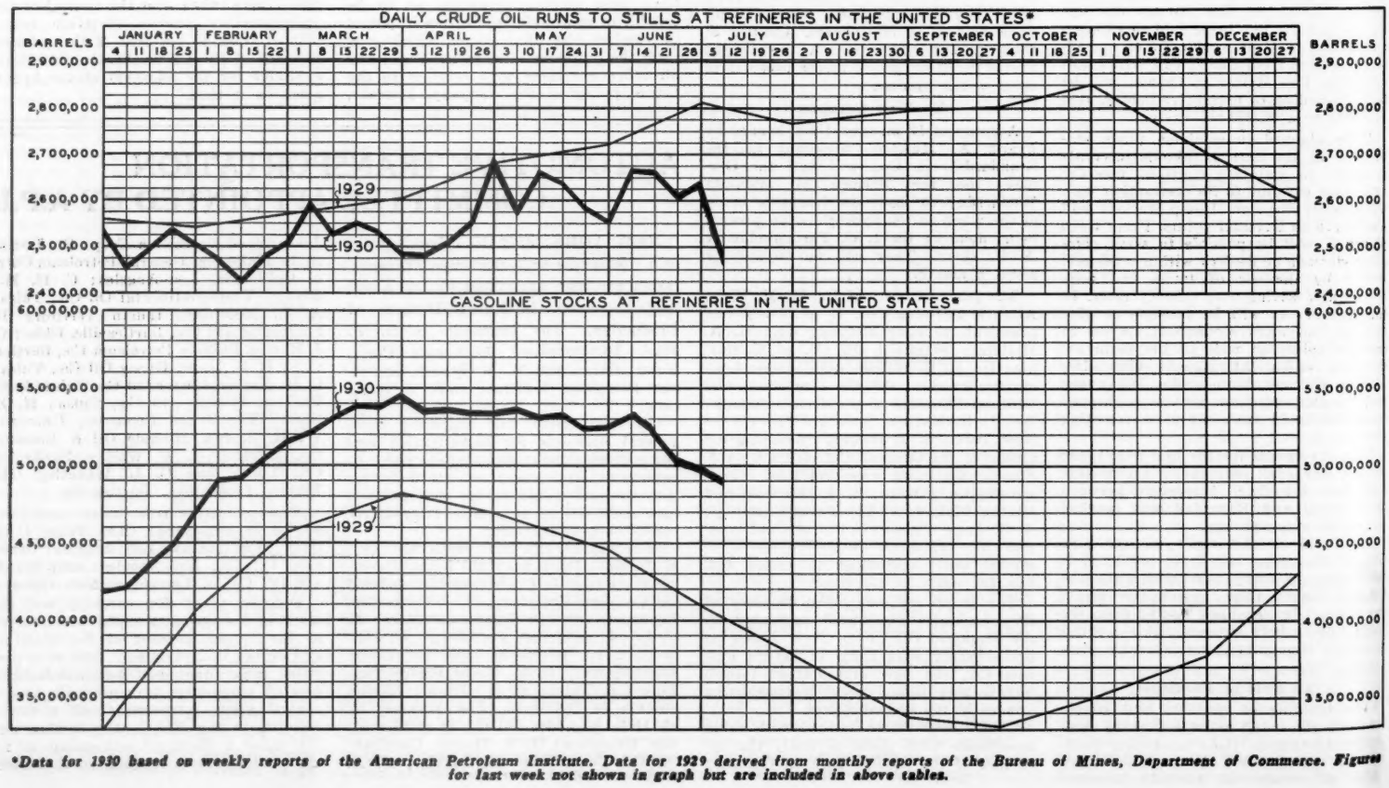
(Continued on Page 150)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending July 12.

	Week ending July 12				Week ending July 5				Week ending January 4			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	475,000	7,743,000	9,361,000	100.0	467,900	8,124,000	9,210,000	100.0	454,857	5,998,000	7,431,000
Appalachian	91.8	82,900	1,589,000	924,000	91.8	70,400	1,632,000	935,000	91.6	75,571	1,282,000	805,000
Indiana, Illinois, Kentucky	99.6	317,400	7,825,000	4,267,000	99.6	290,900	7,864,000	4,112,000	98.6	289,800	5,483,000	3,505,000
Oklahoma, Kansas, Missouri	89.9	278,600	4,189,000	4,785,000	89.9	281,700	4,497,000	4,760,000	87.7	263,428	3,604,000	3,277,000
Texas	90.4	544,900	6,982,000	10,462,000	90.4	559,800	6,843,000	10,516,000	90.7	539,857	6,590,000	13,757,000
Louisiana and Arkansas	96.8	176,100	2,191,000	1,834,000	96.8	166,900	2,320,000	1,883,000	96.8	160,000	2,161,000	4,499,000
Rocky Mountain	93.6	62,400	2,623,000	1,199,000	93.6	57,400	2,678,000	1,187,000	93.3	41,614	2,273,000	973,000
California	99.3	573,700	14,650,000	106,253,000	99.3	583,300	15,076,000	106,535,000	99.3	642,857	14,826,000	109,770,000
Total United States	95.7	2,511,000	47,792,000	139,085,000	95.7	2,478,300	49,034,000	139,138,000	95.4	2,468,285	42,217,000	144,017,000
Texas Gulf Coast	100.0	397,600	5,860,000	7,463,000	100.0	419,100	5,656,000	7,516,000	100.0	429,585	5,579,000	10,792,000
Louisiana Gulf Coast	100.0	117,400	1,812,000	1,011,000	100.0	117,100	1,936,000	1,049,000	100.0	108,514	1,877,000	3,818,000

(1) Per cent of refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



*Data for 1930 based on weekly reports of the American Petroleum Institute. Data for 1929 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

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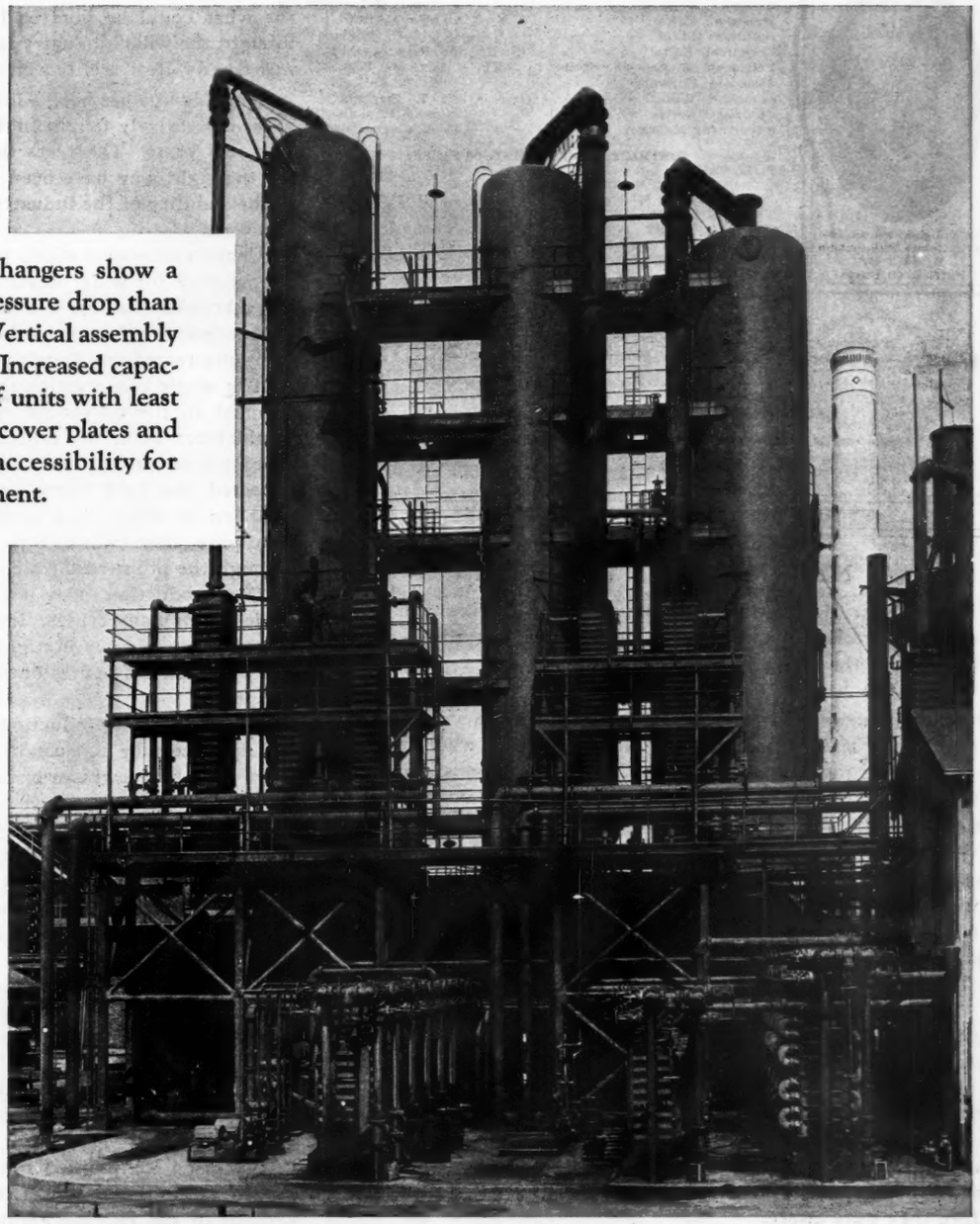

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NEW MEXICO'S DECISION

The industry is familiar with the man who "strikes oil" and is in a rush to produce it and get what he can for it regardless of what it is worth or the effect of his action.

For a time it looked as if we were to see a State government acting the same way. New Mexico was in much the same frame of mind. It had seen other states get rich on oil and when big wells were found in the Hobbs Pool, Lea County, the disposition was to wish them multiplied as quickly as possible so the State could get the new revenue needed for development of its institutions.

When the oil companies, better informed on the effects of overproduction, waste of gas and destruction of values, suggested that it would be more in the State's interest to conserve this new-found and irreplaceable resource the governor and land commissioner were reported insistent upon "orderly development and production."

The outcome is summed up tersely by the Los Vegas Daily Optic:

"The orderly production has culminated in a wild scramble for flush production. The great yield from the Hobbs area can easily wreck the present oil market if not restricted. Orderly development is of far greater benefit to New Mexico than the flood of oil to a glutted market and the resulting paralyzing of the industry."

The development, indeed, was so amazingly rapid that the potential 100,000 barrels daily which the state officials thought should be reached before conservation was considered was upon them almost before they were aware.

This prospective flood of oil demanded instant action and at a conference with representatives of the 24 operating companies there was little difficulty in arriving at an agreement between the state authorities and the operating companies upon an immediate curtailment program.

Governor R. C. Dillon, Dr. Austin D. Crile, State Land Commissioner, and C. S. Staley, State Geologist, have recognized that in view of a present potential of 148,000 barrels with 26 wells completed and with 53 wells drilling, rigging up and located, and an estimated 500,000 barrels daily potential within four months, the need for conservation is very urgent.

The problems presented by the actual development have been a convincing argument. The State is now thoroughly committed to the policy of conserving the gas energy and the recovery of every barrel of oil possible, assured that by this means the best interests of the State will be served rather than by an uneconomic and wasteful haste.

The same conclusion has been responsible for the co-operation of officials in other states who have realized that overproduction means loss of values which in turn represents loss in revenue to the states. On the other hand curtailment and conservation mean longer and better returns to the states.

It is an exact analogy with the operating individual or company won away from the old-time idea of quick production and disposal for what could be got for it. That notion carried out generally brought the whole industry into depression after depression until it was finally clear a check on overproduction was the only way out.

New Mexico has been a lot quicker to learn that lesson but it has been impressively taught in Texas, Oklahoma and California in the past few years. The fears that New Mexico might take longer to see the right way have been happily dispelled and another menace to the stability of the industry only now getting to its feet has been removed.

Conservative operations in New Mexico at this time will mean opportunity for wider development, for exploration of other pools and a broader base for the future oil industry in that State. Overproduction would, on the other hand, discourage and delay development and retard the State's progress.

The whole conservation movement depends upon reciprocal curtailment in the oil-producing states. Overproduction in any one would react upon the others and produce a condition where the necessary concert of action would be impossible. It was not to be expected that "the Texas producers would submit willingly to a situation in which they would operate under curtailment of flow into pipe lines while New Mexico's yield flowed unrestricted through the prorated districts of Texas to the refineries."

Overproduction today is a world problem, not in the oil industry alone but in many others. Improved methods of production and enlarged capacity have brought about a situation for which there is but one solution—curtailment in output and broadening of consumption.

Curtailment in production in line with present demand is immediately necessary to sustain values which must be maintained if there is to be growth in business or basis for greater consumption.

When the wheat grower overproduces wheat and the farmer's prosperity declines, lessening his ability to buy industrial products, those who make industrial products, having less demand for their goods, are correspondingly less able to buy. With the wheat supply matching demand at a fair price the farmer is able to buy from the industrial worker whose increased market increases his ability to buy.

Stabilizing production is therefore the first essential step towards prosperity. When that is accomplished and conditions are improved there can be hope of widening markets and increasing consumption.

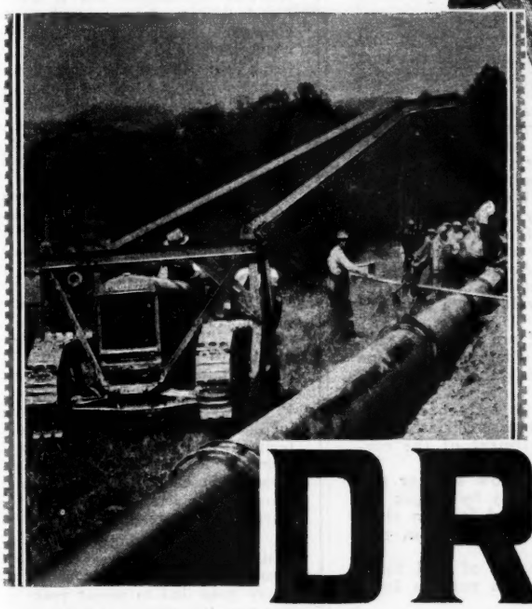
This is so elementary that the wonder is so many in all lines of production keep on overproducing in the mad idea that quantity is what counts.

As has been pointed out in these columns the plight of the farmer should be an object lesson to the oil industry. The present crusade of the Federal Farm Board, supported by the national administration, to have the farmers reduce their wheat acreage in line with demand or prepare themselves for a prolonged period of low prices is exactly applicable to the oil industry, both producers of crude and manufacturers of refined products.

It can be said, after six years of effort, that the oil man is making more progress in dealing with his overproduction problem than the farmer. But it has been a tedious business. Even yet there are too many in the oil industry who are as headstrong as the bulk of the farmers in refusing to see the plain case of cause and effect in the relation of persistent overproduction to repeated depressions.

And unfortunately a very small minority can obstruct the most constructive efforts of a large majority.

The hope of the industry continues to lie in the force of persistent educative influences and the irresistible compulsion of costly experience.



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Significance of Motor Fuel Tests

Distillation Range, Antiknock Properties and Sulphur Content Most Important Factors in Performance. Car Manufacturers Can Aid

By Robert E. Wilson
Standard Oil Co. (Indiana)*

Eight or ten years ago there was no more certain way of starting an acrimonious discussion than to mention the question of gasoline endpoint in the joint presence of an oil man and an automotive engineer. Such discussions were productive of far more heat than light, because the background of facts was inadequate, but they did stimulate research by the larger laboratories in both industries, and eventually resulted in both industries financing the co-operative fuel research program which has been carried out by the Bureau of Standards under the guidance of a joint steering committee.

As a result, the past six or eight years have been characterized by careful and intelligent research in many different laboratories directed toward the question of determining just what tests and specifications are necessary to insure satisfactory performance of motor fuels under different conditions. The results they have reported in detail now make it possible to discuss with intelligence and a reasonable degree of certainty the real significance of all of the more important tests for motor gasoline, and to outline the requirements for certain other tests not yet standardized.

While a large portion of the general public still clings to the belief that the principal difference between grades of gasoline is in economy or mileage, it is a fact that the differences between the mileage are very small compared with the differences in their performance and possible injury to the engine or fuel induction system. The following sections therefore discuss in considerable detail the various tests for motor fuel from the standpoint of just what they indicate as to performance, economy, and possible injury to the engine or induction system. The effort has been made to summarize and give references to the more important recent research work on the various subjects. A study of these many recent and rather highly technical papers emphasizes the need for such a summary of the practical significance of these researches.

Tests for Volatility

Volatility is generally considered to be the most important property of a motor fuel. Under given engine conditions, the ease of starting, the rapidity of acceleration, and the likelihood of trouble from crankcase dilution, vapor-lock and loss by evaporation, all depend almost entirely upon the volatility of vapor pressure of some portion of the fuel. In view of these facts, it is rather surprising that there is no generally accepted test which measures directly the volatility of the fuel under conditions similar to those prevailing in service.

The routine measurement of volatility has been carried out almost exclusively by the distillation of a 100-cc. sample of gasoline according to the Society's Standard Method of Test for Distillation of Gasoline, Naphtha, Kerosene and Similar Petroleum Products (D 86-27). In this method of batch distillation, which involves a certain degree of fractionation, the determination of the initial boiling point does not bear any close relationship to the vapor pressure of the fuel, first, because it neglects from 1 to 5 per cent of very light hydrocarbons which fail to show up as liquid in the condenser; second, because the thermometer is placed in the neck of the flask and not in the body of liquid; and, third, because the thermometer has a pronounced lag at this point in the distillation (10).†

As the distillation proceeds, the character of the residue in the flask becomes increasingly different in composition from anything produced under engine conditions because in the batch distillation test the lighter products are progressively and rather completely removed from the flask, whereas in the carburetor and manifold of an engine the gasoline is introduced into a flowing stream of air where it vaporizes continuously, at lower temperatures, and all the vaporized constituents remain in contact with the unvaporized residue and greatly affect its composition and vapor pressure. The endpoint of the A.S.T.M. distillation is nearly 300° F. higher than, and bears no definite relation to, the temperature of complete vaporization in the manifold.

In view of these facts it would seem desirable to develop continuous distillation methods which would more closely approximate the conditions of service, and this has been attempted by a large number of investigators (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15). It has been found, however, that to carry out enough such tests to give a complete picture of the volatility of the gasoline is enormously more difficult and time consuming than to carry out the well-standardized and generally accepted A.S.T.M. distillation test. Furthermore, it is surprisingly difficult, especially at the lower temperatures, to obtain equilibrium in any continuous air-distillation method (15). As a result, the effort of most workers in this field during the past few years has been to correlate the results of these theoretically more sound, but more difficult, tests with the results obtained by the ordinary A.S.T.M. distillation. Fortunately, these efforts have been crowned with a rather surprising degree of success, and while the fundamental weaknesses of the A.S.T.M. distillation test are thoroughly recognized, satisfactory empirical relationships have been developed between the important volatility characteristics of the motor fuel and certain points on the A.S.T.M. distillation curve, as will later appear.

As intimated previously, volatility is not a single property but the volatility of different portions of the fuel is of importance for different reasons, which will be discussed separately:

Ease of Starting

In starting a cold automobile engine it is almost universal practice to use the choke, which is simply a device for greatly increasing the ratio of gasoline to air in order to get enough gasoline vaporized to furnish an explosive mixture inside the engine. Obviously the greater the ratio of liquid gasoline to air supplied the smaller the proportion of the gasoline which must be vaporized in order to furnish an explosive mixture. However, excessive choking means waste of fuel and excessive dilution of the crankcase oil and is therefore to be avoided.

Extensive work at the Bureau of Standards (10) has shown that the 5 per cent point, corrected for loss,‡ in an A.S.T.M. distillation test is about the best indication of the ease of starting of a gasoline at extremely low temperatures where the choke is pulled out to the maximum extent to give about a 1:1 mixture, and that the controlling point on the A.S.T.M. curve goes up to about the 15 per cent point for 2:1 mixtures under moderate weather conditions. For practical purposes, if the 10 per cent point of a motor fuel is properly specified, there is little chance that the 5 or 15 per cent points can be far out of line, because the two are necessarily tied together rather closely; and it is therefore generally agreed that the 10 per cent point on the A.S.T.M. distillation curve, corrected for loss, is the best available indication of the general ease of starting of a given gasoline. The government specifications require 10 per cent off at 176° F. (not corrected for loss) but most present-day gasolines show 10 per cent off at 158° F. or lower in order to insure easy starting down to 0° F. (17). The 10 per cent temperatures corrected for loss would average about 12° F. lower. Dickinson states (18) that the 10 per cent point corrected for loss should be 140° F. to start an engine readily at 0° F.

Vapor-Locking Tendency

More effective recovery of casinghead gasoline and similar light ends from refinery gases has in recent years greatly increased the amount of light ends available for, and utilized in, commercial motor gasoline. This has resulted in a great improvement in the ease of starting with modern commercial gasolines. The presence of large amounts of light ends in gasoline is, however, not an unmixed blessing, because it tends to increase vapor-lock and evaporation loss.

Gas-lock or vapor-lock is, of course, due to the formation of bubbles or slugs of vapor in the fuel system or the carburetor jet, which decreases the amount of fuel supply and thus starves the engine. This

(Continued on Page 98)

RESEARCH AND GASOLINE PROPERTIES

This paper discusses the significance of the various tests for motor fuels, particularly in the light of extensive research along these lines during the past few years by various industrial laboratories and the United States Bureau of Standards.

While much of the general public still seems to assume that the principal difference between different grades of gasoline is in mileage, actually if one compares today's best and poorest commercial gasolines the difference in mileage is very small compared with the differences in their performance and possible injury to the engine or fuel induction system.

Volatility is generally considered to be the most important property of a motor fuel. Recent research has demonstrated that the 10-per-cent point on the A.S.T.M. distillation curve is the best measure of the ease of starting in cold weather and of the danger of vapor-lock, while the 90-per-cent point is the best measure of the ease of uniform distribution and lack of crankcase dilution in an engine after it has warmed up. Other intermediate points are of some importance in determining the ease of acceleration, especially while the engine is being warmed up; but in general proper limits on the 10, 50, and 90-per-cent points of a fuel will insure good performance under all conditions so far as fuel volatility is concerned. The 10-per-cent point must be especially closely controlled to insure easy starting without too much danger from vapor-lock.

Antiknock quality is today a property of practically equal importance from the standpoint of performance. Actual engine tests under carefully controlled conditions are as yet the only reliable measure of antiknock value. Difficulties in developing a standard engine test are discussed in detail.

Sulphur content, gum content, and freedom from corrosive substances are each of importance in determining whether a gasoline can be used steadily without corroding or clogging the fuel system or other parts of the engine.

Other properties of gasoline have little or no influence in affecting the performance of a motor fuel, except that variations in viscosity or gravity may necessitate the readjustment of the carbureter to give the best results.

High volatility and antiknock properties and low sulphur and gum content all cost money to obtain, and frequently by proper design the automotive engineer can decrease the need for too rigid specifications on all these points. Of especial importance in this connection are the following:

1. More care in design to prevent overheating of fuel lines, vacuum tank, etc., thus permitting the use of more volatile fuels without danger of vapor-lock.

2. Preventing crankcase corrosion and thus raising permissible limits for sulphur by eliminating the condensation of water in engines and crankcases.

3. More uniform cooling of engines, especially aircraft engines to reduce the tendency of hydrocarbon fuels to detonate.

*Assistant to vice president in charge of manufacturing, and head, development and patent department, Standard Oil Co. (Indiana), Chicago, Ill. Paper presented at Symposium on Developments in Automotive Materials, Detroit regional meeting, American Society for Testing Materials.

†The numbers in parentheses refer to the papers given in the list of references appended hereto.

‡The matter of the correction for loss is one which probably needs explanation. In the ordinary A.S.T.M. test, the percentage distilled off can be conveniently determined only by measuring the liquid which has been collected in the receiver; but in almost any modern gasoline amounts of light ends, generally varying from 1 to 4 per cent, fail to condense at the temperature employed, and are determined by adding the residue in the flask to the contents of the distillate receiver at the end of the distillation test, and subtracting this quantity from the 100 cc. originally charged. The difference is reported as distillation loss. It is obvious that these unrecovered light ends come off during the very early stages of the distillation and also that even though they do not show up in the distillate receiver, they are nevertheless very effective in increasing the ease of starting. It is therefore necessary in making accurate comparisons in different gasolines to add the distillation loss to the lower end of the distillation curve where it belongs. This simply means adding the loss, say 2 per cent, to each observed percentage of distillate in the receiver before plotting or reporting the results. Confusion would be decreased and the A.S.T.M. test would fulfill its function better if the method specified correcting all results for distillation loss. Figure 1 shows an A.S.T.M. distillation curve before and after correcting for loss. The term "per cent evaporated" is frequently used for distillation results which have been corrected for loss.

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Washington State Is Attracting Attention Of Big Oil Companies

SEATTLE, Wash., July 11.—Union Oil Co.'s No. 1 McGowan, near the mouth of the Columbia River, is drilling ahead in volcanic ash at 4,225 feet. The test is based on the hope that present volcanic rock is an intrusion overlying favorable formations.

Closing of a deal for 14,000 acres near Bellingham by the Barnsdall Oil Co. has been announced and a deep test is scheduled soon if a favorable report is received from company's geologists who have been dispatched there to make a thorough study of that district.

Barnsdall's newest acreage is in 400 separate parcels, all within close proximity of Bellingham. A portion of the acreage is along the ocean front, while a greater part is understood to be inland.

According to reports, quite a number of shallow holes have been drilled in and around Bellingham during the last two or three years, and a few of the projects are said to have encountered showings that resulted in leasing of the property by Barnsdall. The property in question was formerly held by the Washington North Counties Petroleum Co. Lease requirements state that drilling is to start within six months.

MIDWEST LINE TO HOBBS?

DALLAS, Tex., July 15.—It is reported that the Midwest Refining Co. will start an 8-inch pipe line from Hobbs, N. Mex., to Wink, Tex., and will use Southern Crude Oil Purchasing Co.'s steel storage at that place for the time being, work on line to start immediately.

THE OIL MAN'S CALENDAR

July 25-26—Seattle, Wash., first meeting, Washington Gas and Oil Association.

August 4-9—New York, International Exposition of American Import Trade, Grand Central Palace.

September 2-4 — Toronto, Ontario, North American Gas Tax Conference, King Edward Hotel.

September 8-12 — Cincinnati, Ohio, Eightieth meeting, American Chemical Society, Hotel Gibson.

September 17—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

September 17-19—Atlantic City, N. J., National Petroleum Association, Hotel Traymore.

September 29-October 4—Pittsburh, Pa., petroleum section, National Safety Council.

October 3—Tulsa, Okla., Board of Directors, American Petroleum Institute, Mayo Hotel.

October 4-11—Tulsa, Okla., International Petroleum Exposition and Congress.

October 6-11 — Washington, D. C., Sixth International Road Congress.

October 14-16 — Kansas City, Mo., convention, Big Four State Jobbers.

October 22-24—Pittsburgh, Pa., Transportation meeting, Society of Automotive Engineers.

November 2-5—St. Louis, marketing congress, Independent Oil Men of America, Statler Hotel.

November 10-13—Chicago, Eleventh annual meeting, American Petroleum Institute, Stevens Hotel.

December 1-5—Memphis, Tenn., Ninth Annual Asphalt Paving Conference, the Asphalt Paving Conference, the Asphalt Institute and Association of Asphalt Paving Technologists.

January 3-10—New York, National Automobile Show.

January 24-31—Chicago, National Automobile Show.

Late Fields

MISSISSIPPI

SHREVEPORT, La., July 15.—The third big gas well during the past 10 days and the fifth in the immediate vicinity of Jackson, Miss., was completed by Pearl River Oil Co., whose No. 1 Littlefield in the SE NE, Section 12-5-1e, Rankin County, is estimated at 35,000,000 to 50,000,000 feet of dry gas; total depth 2,429 feet. The location is approximately 1¼ miles northeast of Gulf Refining Co.'s No. 1 Rainey, Section 13-5-1e. It found the top of the chalk at 2,389 feet and checks 14 feet higher than any other well in the district. The Gulf company finally shut off salt water on No. 1 Rainey and completed it for 15,000,000 feet. The Ohio company's test was abandoned as a salt water well.

KANSAS

One of the interesting wildcat tests in Kansas is shut down and may be abandoned as a dry hole. The wildcat test of Rogers, Jones, Kirk and Danciger Oil & Refining Co. on the Raymond townsite in Section 27-20-10w, Rice County, had sand with water at 3,336-41 feet where it is shut down. The Silicious lime was not found and many expressed the opinion the test was running low on structure and would not produce. It was first reported to be in Silicious lime at 3,281 feet, but examinations of the cuttings revealed sand. Other tests on the townsite were drilling ahead. One by Robertson, Connell and Sheldon was drilling at 2,750 feet, and the other by Braden & McClure was drilling at 2,850 feet.

Operators agree on a curtailment plan in the new area east of Wichita, in Sedgwick County. The operators in the new Eastborough Pool have agreed to shut in the producing wells and curtail operations in the area until the pipe line companies can handle the production. Offsets will not be drilled until a market is provided for the crude oil.

Fisher & Lauck, E. W. Marland, Inc., and others' No. 1 Shaffer, NE cor. SE NW Section 30-27-2, made 195 bbls. of the first 24 hours' gauge and is now shut in. The offsets to this well, owned by Blankinship Petroleum Co., Vickers Petroleum Co. and G. W. Hinkle will not be drilled at this time. This agreement is the first made in the area and gives indications of slowing down developments. The new well is in the south end of the pool and is producing from the chat at a total depth of 2,961 feet. Fisher & Lauck's No. 2 Trustee, about a half mile north, swabbed 1,324 bbls. in 24 hours, July 14. The pool may be extended a half mile north by the Derby Oil Co.'s No. 1 Community, in Section 19-27-2. It was drilling at 2,850 feet on the last report.

Simmons & Canary's No. 1 Bishop, NW cor. SW Section 15-18-1w. McPherson County wildcat, had a showing of oil and water in the chat at 2,747-56 feet. It was drilling deeper in chat at 2,802 feet, with water in the hole.

OKLAHOMA

The important wildcat test, Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW, Section 17-13-3w, Oklahoma County, was drilling ahead at 6,692 feet. It is believed the oil showing was increasing. It will be given a productive test when the wind conditions are favorable.

The wildcat test of the Ryan Consolidated Petroleum Corp. east of the Oklahome City Pool, No. 1 Lawton, NE cor. NW. Section 3-11-2w, was drilling deeper at 6,791 feet with standard tools with nothing showing.

The production of the Oklahoma City Pool shows a big decline on the gauge of July 15 when the pool made 29,563 bbls. from 38 wells out of 348 wells completed.

Wirt Franklin Petroleum Corp.'s No. 1 Page, SE cor. Section 35-12-3w, in

(Continued on Page 153)

High Spots in Field News

EAST CENTRAL TEXAS
Two more dry holes seem to limit Van Pool in two directions.

KANSAS
Voshell potential mounts steadily; production cut to 11,000 bbls.

MISSISSIPPI
Three good gas wells completed in Jackson area and Hinds County, Mississippi.

NORTH TEXAS AND PANHANDLE
Gray and Hutchinson County flush production leads in decline. Riggs Pool, Young County, prorated.

NORTH LOUISIANA-ARKANSAS
Two new tests begun in Bossier Parish. Fair well in Carterville. Holly and Zwolle wildcats abandoned.

CALIFORNIA
Drilling increases in Playa Del Rey Field. Field should be relatively large in area and satisfactory in output.

SOUTHWEST TEXAS
New pool opened in north end of Cartwright Field, Live Oak County. New gas sand in Saxet Field. Rapid development in Escobas Pool.

GULF COAST
Pierce Junction extended north. West side of Humble proved for important production. Deep sand completions at Refugio and Barbers Hill.

OKLAHOMA
Agreement reached for Oklahoma City Pool shut down for indefinite period from July 12. State production to be cut to 550,000 bbls. daily.

ROCKY MOUNTAIN
Agreement reached for curtailment in Hobbs Pool, New Mexico. Potential passes 130,000 bbls. Rotary drilling record in Rocky Mountain area.

WEST TEXAS
Sunray-Llano well, north extension of Penn Pool, Ector County, plugged back because of sulphur water and will make small well. Big Lake wells increase production. Irion County test abandoned.

Weymouth Advanced to Chairman of Board, Succeeded by Deal

Thomas B. Weymouth has been made chairman of the board of directors of the Oklahoma Natural Gas Corp. and is succeeded as president of the corporation by E. C. Deal of New York. The changes were announced late Monday in Tulsa.

It is understood Mr. Weymouth will divide his attention between the Oklahoma Natural Gas Corp. and the American Natural Gas Corp., of which he is president. The business of directing the construction work of the latter concern has occupied so much of Mr. Weymouth's time recently that the board acted upon his request to be relieved of his duties as executive head.

The new president is nationally known in the public utility field. He comes from New York City, where he has been president of the Peoples Light & Power Corp. He is a native of Georgia and has spent a large portion of his life in the South and Southwest.

At different periods he was associated in an executive capacity with Electric Bond & Share, Public Service of New Jersey, Stone & Webster, J. G. White, Federal Light & Traction and other public utility interests. During the three years he has been president of the Peoples Light & Power Corp. it has become known as a very important utility system.

Mr. Weymouth will continue to maintain his residence in Tulsa. He succeeded R. C. Sharp as president of the Oklahoma Natural Gas Corp. on July 1, 1928.

S. W. TEXAS SCOUTS ELECT

SAN ANTONIO, Tex., July 14.—Jesse Bullard, Shell Petroleum Corp., has been elected president of the Southwest Texas Oil Scouts' Association to succeed D. C. DeWitt, Simms Oil Co., Joe L. Cullinan, Republic Production Co., was named vice president and M. J. Bonham, Continental Oil Co., secretary-treasurer. C. O. Maddox and J. Stanley Smith, independent operators, were chosen as associate members of the executive committee.

On motion of J. V. Adams, Humble Oil & Refining Co., president of the National Oil Scouts' Association, a committee was authorized to prepare informative reports on oil field development in this section of the State.

MAGNETIC STORM

United States Coast and Geodetic Survey observatory at Tucson, Ariz., report a moderate magnetic storm started at 9 a.m. (Central Standard Time) on July 9 and ended at 8 a.m. (C.S.T.) July 10. The telegram reads as follows:

"Storm began ninth fifteen. Moderate. Ended tenth fourteen."

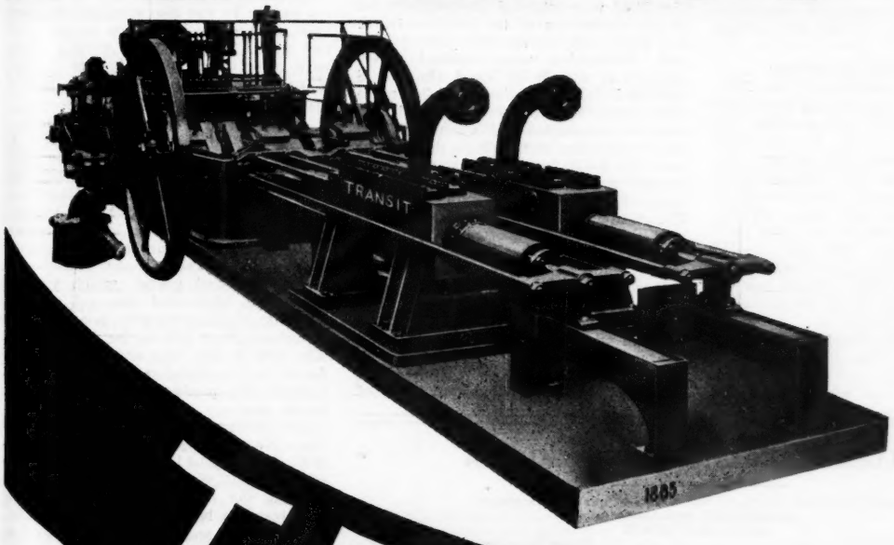
SCORE CARD ON OIL PRODUCTION

Below is shown allotted average daily production in the United States, April to December, inclusive, suggested by the Committee on Economics of the Federal Oil Conservation Board, and the actual daily average production during the week ending July 12:

	Allotted (bbls.)	Actual (bbls.)	Over (bbls.)	Under (bbls.)
California	610,000	608,500	.....	1,500
Oklahoma	655,000	615,185	.....	39,815
Texas	750,000	845,411	95,411	.....
Other fields	480,000	472,334	.....	7,666
Total	2,495,000	2,541,430	95,411	48,981

Net overproduction, 46,430 bbls. per day.

STURDY FLEXIBLE ECONOMIC DEPENDABLE



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Deep Cut in Oklahoma Production

Decline in Crude Requirements Reduces Output 40,000 Bbls. a Day. Oklahoma City Shut Down Temporarily

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Curtailment of crude runs to stills by refiners affected the production of crude oil in Oklahoma last week and production dropped from an average of 655,120 bbls. per day in the week ending July 7 to 615,100 bbls. per day in the week ending July 14. The largest decline was in the Oklahoma City Pool where production was cut back 20,000 bbls. a day. The proration committee of the Mid-Continent Oil and Gas Association met last Thursday in Tulsa to determine the quantity of Oklahoma oil the purchasing companies were willing to take and found that 575,000 bbls. a day would fill requirements. This is 80,000 bbls. a day less than the pipe line companies were willing to take at the meeting held in June, but at that time the purchasers did not know that conditions would require a curtailment of crude runs to stills.

Interest in the Oklahoma City area during the week has been in the Prairie Oil & Gas Co.'s No. 1 Dills, a wildcat, several miles north of the production in the main pool. The test found about 3,500,000 feet of gas in the Simpson series and was drilling deeper.

Whole Pool Shut In

The producing wells in the Oklahoma Pool were shut down for an indefinite period from July 12. It was the second time all the producing wells in that pool have been subjected to a complete shut down. The wells allowed to produce were only the ones that are drilling deeper or are being cleaned out. The complete shut down is to allow the pipe line companies to handle the storage oil now held in lease tanks in the Oklahoma City Pool, and also to permit the underproduced wells to make their initial 24-hour gauge before being shut in for the 65 days required under the proration plan. It is expected about two weeks will be required by the pipe line companies to catch up with the storage oil and after that time the field will go back on a proration plan of not less than 8⅓ per cent nor more than 20 per cent of the potential production.

Two new wells were completed over the week end in the Oklahoma City Pool, and a number of others were preparing to bail down. The field is expected to lose little of its activities during the coming weeks. Indian Territory Illuminating Oil Co.'s No. 1 H. G. Trosper, SW cor. NE NE, Section 13-11-3w, near the middle of the field, flowed 275 bbls. the first 30 minutes, and 7,595 bbls. the first 16 hours and 35 minutes. The total depth of the well is 6,495 feet in sand. The well was swabbed, and was estimated to have 6,000,000 feet of gas. The same company's No. 8 Mary Sudik, NW cor. SE SW, Section 31-11-2w, in the south end of the pool, was completed and made 160 bbls. of oil the first 15 minutes, and 8,916 bbls. in 15 hours. The gas was estimated at 10,000,000 feet.

Tom Slick Oil Co. and others' No. 1 G. Milner, SE cor. SW NW, Section 1-11-3w, in the extreme north end of the pool, which was completed a few days ago, was opened for its initial 24-hour gauge Saturday and made 9,924 bbls. of oil in 18 hours.

The Shutdown Agreement

A complete shutdown of all the producing wells in the Oklahoma City Pool for an indefinite period was agreed upon at a meeting July 11. During the last few days the wells in the field have been producing one day in 12 instead of two days in 12 in order to permit pipe lines to handle the surplus oil now held in lease storage. However, production from the field has been about the same and the pipe line companies have been unable to handle but little of the storage crude.

The shutdown of all the producing wells in the pool became effective July 12 at 7 a.m. and will continue until the pipe line companies can remove the surplus oil from lease storage and permit the underproduced wells to make up their allowable flow. No time limit has been fixed, but it is expected the pipe line companies will be able to handle the situation in one 12-day period. The completion of new wells during the time will have some effect on the amount of oil the pipe lines can take from storage. The wells that are cleaning out and drilling deeper will also add some production to the field.

When the wells are put back on production after the storage oil has been cleaned up, the allowed production will be 8⅓ per cent of the potential daily average production until further changes are made. The pipe line companies have agreed to take 85,000 bbls. a day from the field, while under the old plan 105,000 bbls. was the amount. The only possibility of the pipe lines increasing their runs is for other flush fields in the State to decline, in which case the extra allowable will be taken from the Oklahoma City Pool, and the permitted production will be increased to 20 per cent of the potential.

No Restrictions on Drilling

There is to be no shutdown of the drilling wells, but it is understood that some attempt will be made to discontinue the staking of new locations. In the north end of the field a water shortage may curtail operations. The city commissioners have refused to extend water service to wells outside of the city limits, because the demand has increased to a new peak throughout the city. The extension of water mains in several parts of the city is essential because the pressure has declined, due to the enormous drains on the supply by the oil companies.

Pipe Line Receipts

The Prairie Oil & Gas Co. is estimated to be taking about 15,000 bbls. of oil per day from the pool, which is a reduction of about 25 per cent. Sinclair Pipe Line Co. is taking about 12,000 bbls. a day. The company's new line to Shawnee has never been tested and is not in operation. The company plans to build only five 80,000-bbl. tanks instead of 10, as first proposed. Shell Pipe Line Co. is handling about 5,000 bbls. a day and will reduce the amount to 1,000 bbls. a day. Magnolia Pipe Line Co. is running about 16,000 bbls. a day, of which 6,000 bbls. is going to the Tidal Oil Co. Empire Pipe Line Co. may reduce its runs, which have been about 21,000 bbls. a day. Oklahoma Pipe Line Co. has been running about 20,000 bbls. a day, which is more than it cares to take. The tank car shipments are being held to about normal and no increases in the tank car shipments are expected. Under the complete shutdown plan the tank car shipments will be subject to the same penalties as the pipe line companies.

A few of the recent completions in the field are without a pipe line connection at this time and are shut down with all lease storage full. A survey is under way by Umpire Otto Bradford, checking all operations. He is listing the time of starting to spud, and estimating the time of completion of all drilling operations. This will enable the pipe line companies to facilitate the handling problems when these operations are completed.

West Side Extension

The producing area of the Oklahoma City Pool was extended during the week by the completion of the Sinclair Oil & Gas Co.'s well on the west side of the pool. Production was extended three-quarters of a mile by No. 1 Donnell, S half SE NE NW, Section 23-11-3w, made 1,958 bbls. the first 12 hours. It is the first well completed in Section 23-11-3w, and record time was made in drilling the test. The 6,351 feet of hole was made in 29 drilling days. The total depth of the test is 6,597 feet, in the Simpson sand. The completion of this well makes the west side of the pool attractive, since it has been believed that production would not extend further in that direction. The well is offset by tests on the north, south and east only and an active drilling campaign is expected to develop. This part of the pool gives indications of being as active as the north sector.

Sinclair Oil & Gas Co. completed another well in the south end of the pool. No. 14 Vencl, NE cor. SE SE, Section 31-11-2w, made 170 bbls. of oil the first 15 minutes and 620 bbls. the first hour, 540 bbls. the second hour, and 2,225 bbls. in four hours. The gas was estimated at 12,000,000 feet. The total depth of the well is 6,543 feet in Simpson sand. No. 16 Vencl, SE cor., Section 31-11-2w, was bailing preparatory to making a production test at a total depth of 6,585 feet. The latter made 3,545 bbls. in three hours.

Cromwell-Franklin Oil Co. and others staked three more locations on the Trosper Park property making a total of 37 operations on the city-owned property.

Tom Slick Oil Co.'s No. 1 Classen, NW cor. SE NW, Section 2-11-3w, made 1,737 bbls. in 14½ hours. The total depth of the well is 6,608 feet. It was completed about two weeks ago but made considerable sand with the oil and was shut in before it was allowed to take its initial production gauge. Same company's No. 1 G. Milner, SE cor. SW NW, Section 1-11-3w, in the north end of the pool, was bailing down from a total depth of 6,509 feet.

Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Dills, SE cor. NW, Section 17-13-3w, a wildcat north of the South Oklahoma City Pool, found 3,500,000 feet of gas in the Simpson series at a total depth of 6,634 feet. The test was shut down for a few days. It has resumed operations and was drilling at 6,680 feet and will be drilled to the Wilcox sand. It was also spraying considerable gasoline, estimated as much as 15 per cent. The test was drilling ahead with cable tools. Some believe the test is running sufficiently high to make a producer in the deeper horizons.

Cleveland County Extension

The Continental Oil Co.'s No. 3 V. Sudik, NW cor. NE NE, Section 6-10-2w, Cleveland County, made 650 bbls. the first hour, and an estimated 25,000,000 feet of gas. It was then shut in but was opened up several hours later and made 8,810 bbls. in 8 hours and 30 minutes. Accompanying the oil was considerable mud, rocks and gravel, which wrecked the crown block and damaged the rig. The connections were also damaged when the crown block fell to the derrick floor. The well is the most southeasterly producer in the Oklahoma City Pool and extends the production a quarter mile to the east.

The Indian Territory Illuminating Oil Co.'s No. 5 Mary Sudik, SW cor. NE SW, Section 31-11-2w, has the operators guessing. It was cleaned out to the bottom of the hole and refused to flow. The test has been bailing for about two weeks and it was first believed the hole had bridged. A shot of nitroglycerin may be used to loosen the sand. The total depth of the well is 6,664 feet. It is only a quarter of a mile from the wells that flowed wild for 11 days, and was estimated to be making 30,000 bbls. of oil and 200,000,000 feet of gas.

One of the older wells in the field was found to be dead when opened for its regular producing period. Skelly Oil Co.'s No. 5 Hoopes, NW cor. NE NE, Section 31-11-2w, in the south end of the field, was opened for its regular producing period during the week and refused to flow. The tools were being installed and will be run into the hole in hopes of reviving the well.

In the north end of the field Indian Territory Illuminating Oil Co.'s No. 5 E. Theimer, NW cor. SW SE, Section 1-11-3w, flowed 112 bbls. of oil the first hour. The gas was estimated at 7,000,000 feet. The total depth of the well is 6,388 feet in the Simpson sand.

(Continued on Page 119)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Cleaning out 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.; cleaning out.

BECKHAM COUNTY

Ray Johnson and J. R. Cuniff's No. 1 Brower, C NW Sec. 29-10-22w	Drlg. 3,296 ft.
Producers Exploration Co.'s No. 1 Sidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson et al's No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,575 ft.

BLAINE COUNTY

Lowen et al's No. 1 Unknown, NW cor. SW NW Sec. 17-16-11w	Spudded and shut down.
Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 12-19-10w	Underreaming 3,550 ft.

CADDO COUNTY

Sims Pet. Co.'s No. 1 Cobsa, SW NW Sec. 24-6-11w	Rig.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CHEROKEE COUNTY

Weaver & Proctor's No. 1 Benge, NE SE Sec. 8-14-21	Spudding.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Drlg. 6,485 ft.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.

COAL COUNTY

A. M. Van Orden's No. 1 Jamison, SE NW Sec. 31-1-9	Shut down 1,300 ft.
Blackwell O. & G. Co.'s No. 1 L. Jackson, NW cor. Sec. 26-3-9	Drlg. 48 ft.
W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 3,030 ft.

(Continued on Page 112)

Voshell Potential Mounts Steadily

Kansas Production Kept Down by Most Rigid Curtailment and Proration. Voshell Cut Down to 11,000 Bbls.

By W. A. Spinney
Staff Correspondent, Kansas Fields

Increased curtailment in the flush areas in Kansas was mainly responsible for the 3,500 bbls. a day decline in the State's production for the week ending July 12. The total daily average production was approximately 127,700 bbls. for the same seven days. The production is expected to show a further decline the coming weeks when the curtailment plan, caused by lower refinery requirements, has been in operation for a few weeks.

One of the interesting wildcat tests in Rice County was drilling with nothing showing on the latest report. The test is being drilled by Rogers. Danciger Oil & Refining Co. and others' No. 1 Townsite, in Section 27-20-10w, on the townsite of Raymond. The Silicious lime was found at 3,281 feet and it was drilling at 3,287 feet on the report of July 12. The 5-inch casing was landed at 3,279 feet to shut off a showing of water.

Another test found oil in the Eastborough Pool in Sedgwick County the last part of the week. Fisher & Lauck's No. 1 Shaffer, NE cor. SE NW, Section 30-27-2, was estimated to be showing 200 bbls. a day from the chat at 2,949-62 feet. It swabbed 8 bbls. an hour when first drilled from 2,957 to 2,932 feet. An interest in the test and the 80 acres of lease was sold during the week before the test reached the pay horizon by the E. W. Marland, Inc. to W. M. Landeick for the reported consideration of $35,000. The acreage included in the transaction was the S half NW, Section 30-37-2, Sedgwick County.

The semiwildcat test of Spencer & Wixon and others on the east edge of Wichita, northeast of the Eastborough production, found a hole full of water in the chat at 2,934-68 feet. The test was located in the SW cor. SE, Section 17-27-2, Sedgwick County. Drilling operations were suspended but it is believed the owners intend to carry the hole to the Simpson horizon, where there is another chance for production.

During the week the second well in the Eastborough Pool was drilled into pay. Vickers Petroleum Co. and others' No. 1 Keys, in Section 30-27-2, Sedgwick County, was swabbing around 35 bbls. a day from chat at 2,947-69 feet. The new well is a diagonal offset to a 1,500-bbl. producer and some believe the area may be spotted which has been characteristic of the chat formation in other districts. The oil rose in the hole 2,000 feet. It was drilled to 2,997 feet and found water. It may be drilled to the Simpson series. Fisher & Lauck's No. 2 trustee, again began producing in the middle of the week after being shut in to erect a 10,000-bbl. tank on the lease. The tankage has been completed and the well was allowed to flow wide open making 25 bbls. an hour, the first 12 hours. The well was agitated and increased its flow to around 50 bbls. an hour, making 1,127 bbls. in 24 hours.

McPherson Developments

McPherson County's wildcat producers add to the output of the county. These wildcat wells, it is believed, are capable of producing considerably more oil than they are yielding owing to the lack of pipe line facilities. The area surrounding these wells is considered to be some of the most promising now left in the State for the future supply of crude oil. Mid-Kansas Oil & Gas Co.'s No. 1 Pitts, in Section 2-19-2w, near the Decker gas area, is making 90 bbls. a day. Shell Petroleum Corp.'s No. 1 Robinson, in Section 10-19-2w, in the same district, is making 150 bbls. a day, with a back pressure of 740 pounds. McBride, Inc.'s No. 1 Whitewright, in Section 30-19-1w, is making around 120 bbls. a day after being treated. Other tests in these areas are being delayed until the crude oil situation has improved.

In the north end of the Voshell Pool, in McPherson County, Slick, Pryor and Lockhart and others' No. 1, in the SW cor. NW Section 34-20-3w, had 11,000,000 feet of gas in the chat at 3,040 feet and was drilling in that formation at 3,100 feet. The test was also making about 200 bbls. of oil from the same horizon. Gypsy Oil Co.'s No. 2 Stuckey, SE cor. SW NE Section 33-20-3w, made 855 bbls. from the Wilcox sand at a total depth of 3,290 feet.

The Voshell Pool, in McPherson County, which has a potential production of 47,000 bbls. a day, has an actual outlet for about 11,000 bbls. of oil a day. The field is now curtailed to 24 per cent of the potential production. Some of the wells in the south end of the field are showing water, those on the Shell Petroleum Corp.'s lease in S half SE Section 9-20-3w believed to be making the most water. The Derby Oil Co.'s No. 8 Stuckey is also making some water.

W. C. McBride, Inc., completed another well in the north end of Voshell Pool. The well is located in the SE cor. SW NE Section 4-21-3w, and swabbed 229 bbls. from the Silicious lime at a total depth of 3,470 feet.

The Voshell Pool, from the umpire's report of July 1, shows a potential of 47,162 bbls. from 81 wells. With the completion of several new wells in the pool within the next few days, the potential production is expected to be approximately 50,000 bbls. a day. On account of the limited pipe line outlet, the operators' committee recommends that the present proration agreement be extended for 45 days from July 15 to September 1, on the same plan and regulations existing at the present time, with the exception that the potential production tests be taken every 30 days instead of every 15 days and that the tests taken July 1 apply until August 1, and at that time new potentials be taken for the month of August. The present plan calls for the proration to be the amount of the pipe line outlet.

Results in Rice County

East of the Schurr Pool, in Rice County, C. B. Davis has completed No. 1 Kelly, SW cor. NE Section 22-20-10w, for a gas and oil well in the shallow sand. The pay horizon in the well is 2,566-92 feet, where it is estimated to be making 3,000,000 feet of gas and 40 bbls. of oil. The well has two other gas horizons which have been bradenheaded, one at 2,222 feet, and the other at 2,415 feet. The rock pressure of the gas is 640 pounds. Tubing is being used to produce the oil and a gas separator is being installed. The gas will be sold to other drilling tests in the vicinity.

On the Raymond townsite, southeast of the Schurr Pool, in Section 27-20-10w, about 2 miles southeast of the present producers, Rogers, Danciger Oil & Refining Co. and others' No. 1 Townsite was shut down the first part of the week. The test was expected to resume drilling operations in the near future. The present depth of the test is 3,255 feet, and the pay horizon is expected at 3,285 feet. The test is an important one as it may extend the production in the area.

On the east side of the Schurr Pool, Independent Oil & Gas Co.'s No. 2 Mezger, SE cor. SW NE Section 21-20-10w, had a showing of gas at 3,100 feet, which is estimated at 3,000,000 feet. It is the first gas found at this depth in the pool.

New Pool in Butler County

The second well in the new area northwest of Augusta, in Butler County, which was opened by Sullivan & Melrose and others, is the Lario Oil & Gas Co.'s No. 1 Gelwicks, NW cor. SW Section 6-27-4. The oil was found in sand at 2,939-40 feet, and is estimated at 100 bbls. a day. The well was showing considerable water when first drilled into the pay, and does not offer much encouragement for a west extension. The new well is two locations west of the discovery well.

In the Haverhill district, Butler County, Connell & Austin's No. 1 in the NW cor. Section 23-27-5, is being given a second shot. The first shot did not have the desired effect. The well is the first producer in the area outside of the Empire Oil & Refining Co. holdings.

New Locations in Ellis

In Ellis County the Phillips Petroleum Co. has announced three new locations for the Shutts Pool, northeast of Hays. No. 1 Herman will be drilled in the NE cor. Section 7-12-17w, a half mile west and half mile south of the same company's No. 1 Horn, the largest producer in the area. No. 1 Karlin will be drilled in the NE cor. SE Section 6-12-17w, and No. 1 Kessler in the SE cor. 32-11-17w.

Barber County Gas Field

Barber County in the south central part of the State is adding to the gas production of the State. The rock pressure of the gas at the wells is 650 pounds. The Barbara Oil Co. has the majority of the completed gas wells in the county and is drilling several other tests. No. 1 Hammond, C SW NW, Section 24-33-13w, has cemented the casing at 4,000 feet and is preparing to drill the plugs. Same company's No. 2 Angell, C NE NE, Section 23-33-13w, is a new operation. Same company's No. 1 Alexander, in Section 7-33-12w, failed to extend the gas production in the area to the east and is being plugged to 5,110 feet. The test was plugged back to 4,600 feet and given a shot but only a light showing of gas was found. McPherson Oil & Gas Co.'s No. 1 Rule, CSL NW, Section 10-33-13w, is preparing to spud. The county is without any oil production.

Work in Reno County

The wildcat test of McBride, Inc. and others' No. 1 Bacon, SW cor. NE SW, Section 36-23-5w, Reno County, found three bailers of water per hour from the Wilcox sand at 3,843-46 feet. The test had a showing of oil in the Viola at 3,812-25 feet, where the oil rose 700 feet in the hole. The test was shut down. Another wildcat test in the same county drilled by Tatlock, Shell Petroleum Corp. and others' No. 1 Tonn, NW cor., Section 17-25-4w, made 102 bbls. of oil and 51 bbls. of water of a recent gauge.

Wildcatting in East

The older producing counties in the eastern part of Kansas are again being exploited. Major oil companies and independent operators are working geological parties in Greenwood, Coffey and Osage Counties. These older areas are attractive because they require a smaller financial outlay than the wildcat areas in the central and western part of the State. In Greenwood County, southwest of the Wiggins Pool, the Phillips Petroleum Co. and Aladdin Petroleum Co. are working together, drilling on the trend with other operators following. North and northeast of Hamilton, Prairie Oil & Gas Co., Empire Oil & Refining Co., Syndicate Oil Corp., A. M. Landon and others are drilling tests along the trend southeast through the Patterson Pool, which gives indications of extending to Quincy in Greenwood County.

In Greenwood County, the Sinclair Oil & Gas Co. and others' No. 2 Beavers in NE cor. SW, Section 25-24-12, found gas at 1,604-25 feet where the rig caught fire from what was estimated to be 750,000 feet of gas. The drilling equipment was destroyed during the fire and new is being installed. The test will be drilled deeper to the Bartlesville sand.

Butler County

Johnson and others' No. 1 Stern, SW cor. NE SE, Section 28-27-6. National Refining Co. and others moved the rig in for No. 1 Hedderman, SW cor. NE, Section 24-28-5. Condon & Cadman made location for No. 1 Price, NE cor. NW SE, Section 8-29-6. Empire Oil & Refining Co.'s No. 98 Koogler, SW cor. SE NW, Section 19-26-5, has been completed for 80 bbls. in sand 2,605-60 feet.

Cowley County

Pryor, Lockhart and Johnson's rig is up for No. 1 Headley, SW cor., Section 20-31-6. Pryor, Lockhart and Patton made location for No. 1 Sitton, NW cor., Section 29-31-6. Lewis Oil Co. and Johnson's No. 1 Orr, NE cor., Section 30-31-6,

(Continued on Page 117)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARBER COUNTY	
Barbara Oil Co.'s No. 1 Hamblin, SW NW Sec. 24-33-13w	Shut down 4,765 ft.
Phillips Pet. Co.'s No. 1 Powell, SE cor. SE Sec. 11-32-10w	T. D. 4,265 ft.; underreaming 6-in. csg.
BARTON COUNTY	
Slick and Prairie's No. 1 Rude, SW cor. Sec. 11-16-13w	Drlg. 420 ft.
BUTLER COUNTY	
Pioneer Pet. Co.'s No. 1 Crist, NW SE Sec. 33-26-4	Drlg. 735 ft.
Farrell et al's No. 1 Sutton, NW cor. Sec. 18-28-7	Rig on ground.
Aladdin Pet. Co.'s No. 1 Metzger, NW SE Sec. 23-28-3	Drlg. 2,290 ft.
Gypsy Oil Co.'s No. 1 Osborne, NW SE Sec. 22-26-3	Drlg. 560 ft.
Joe Liggett's No. 1 Guanther, C SE NE NW Sec. 29-26-7	Drlg. 1,540 ft.
CHASE COUNTY	
Steinbuckel et al's No. 1 Stephenson, NE SW Sec. 4-20-6	Abandoned 2,185 ft.
CLARK COUNTY	
Watchorn's No. 2 Morrison, NW NE Sec. 20-32-21w	Shut down 6,212 ft.
CLAY COUNTY	
Grisier et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.
COFFEY COUNTY	
Ritchey et al's No. 1 Rossenmacher, C SE Sec. 36-22-13	Drlg. 2,200 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Drlg. 820 ft.
COWLEY COUNTY	
Tom Fine's No. 1 Boyd, NW NE Sec. 32-32-4	Drlg. 1,410 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Drlg. 1,800 ft.
Cross' No. 1 Sanden, NE cor. Sec. 12-15-2	Rig.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Shut down 50 ft.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4	Shut down 2,935-43 ft.; water.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1	Drlg. 2,525 ft.

Two Good Gas Wells in Mississippi

Bring Total of Successful Tests in State to Six. Two New Tests Begun in Bossier Parish. Fair Well in Carterville

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., July 14.—Developments in Mississippi took precedence over everything else in this part of the country this week when two wells on the Jackson structure near the capital of the State, one in Rankin County and the other in Hinds County, were completed as big gas wells producing from chalk rock at 2,450 and 2,500 feet. Louisiana Gas & Fuel Co.'s first well, No. 1 Toole, in the SW NE, Section 28-6-1e, Rankin County, was completed July 8 at 2,503 feet gauging 20,993,480 feet of gas at 1,050 pounds and on the same day Love Petroleum Co.'s No. 1 Hutton, NW NE, Section 11-5-1e, Hinds County, gauged 22,000,000 feet at 1,050 pounds from 2,447 feet total depth. Both were bone dry during the short while they were allowed to blow but experience with the three previous completions in the vicinity occasions the fear that if allowed to blow, or if pulled on heavily for any length of time, they might develop water trouble. As there is no outlet for the production at present such contingency, however, is more or less remote.

Six-inch casing was cemented in the Toole well on top of the chalk at 2,502 feet, 1 foot off bottom, and at 2,447 feet, and also on top of the chalk in the Hutton well which is the second successful well which Love Brothers, the drillers, have completed. The Toole well is approximately 2 miles northwest of Jackson Oil & Gas Co.'s discovery, No. 1 Mays, in Section 2-5-1e, Hinds County, completed February 18 this year making 2,000,000 feet of gas from 2,480 feet and used to fuel other drilling operations in the Jackson area. The other new producer is half a mile south of the discovery well.

These two bring the number of successful tests in Mississippi to six with a seventh probable entitled to rank as a gas well. The first was Amory Petroleum Co.'s No. 1 Carter in Section 7-13-7, Monroe County, the first successful well drilled in Mississippi, completed October 7, 1926, as a 2,000,000-foot producer at 2,470 feet. The second, drilled by Amory Natural Gas Co., No. 2 Carter, in Section 7-17-13, Monroe County, last August, measured 640,000 feet of gas at 2,592 feet. The next well to attract attention was Gulf Refining Co.'s No. 1 Rainey in Section 13-5-1e, Rankin County. It was estimated at 15,000,000 feet of gas with 4,000 bbls. of water and a show of oil from 2,500-20 feet and was subsequently drilled to 3,607 feet and at present is cemented back to 2,500 feet and waiting for plug to set. Love Oil & Gas Co.'s No. 1 Mendoza, Section 11-5-1e, Hinds County, was the first real well in the State so far as size goes, although the Amory discovery well in Monroe County is reported to have actually made in the neighborhood of 16,000,000 feet. Completed soon after the Jackson Oil & Gas Co.'s No. 1 Mays, the Love well gauged 28,500,000 feet at 1,000 pounds from 2,447 feet on completion May 5. Since the Love and Jackson Oil & Gas Co. wells of earlier in the year the vicinity of Jackson has been the active area of the State with 20 operations listed, of which four are in Rankin County. Thirteen of the 20 are actually under way, two of them in Rankin County. There is some activity elsewhere in the State but the majority of the operations carried on the field report are idle and have been for months. Just now Mississippi Petroleum Co. is engaged in drilling a series of shallow formation tests in Newton County on a block in Townships 5 and 6, Ranges 12 and 13, surrounding the town of Hickory.

Bossier Parish Tests

The increase in activity around Jackson has something of an echo in the Bellevue district of Bossier Parish where, as the result of H. I. Morgan's success in getting gas on the southwest flank of the Bellevue Dome, R. L. Autrey has completed another small gas well and Autrey Oil Co. has begun two new tests. A. L. Autrey's completion was No. 7 Smith in the NW cor., Section 26-19-11, in which he got 2,000,000 feet of gas with 5 to 10 bbls. of oil from 1,965 feet. Morgan's gasser in Section 22-19-11, measuring 38,500,000 feet of gas from 7 feet of sand, was completed at 1,786 feet. Autrey Oil Co.'s new wells are No. 1 Johnson, SW NE, Section 34-19-11, and No. 1 McDade, NW SE, Section 28-19-11, on both of which derricks are up.

Carterville Well

The Texas Company's Wilkinson lease in Section 36-23-12, Carterville district, the most prolific in the field and which ran 39,000 bbls. during June, was the location of another good well for the company, No. 10, in the SE cor. NE of the section, flowing 200 bbls. initial from 3,162 feet. No. 11, the same lease and section, on the other hand, made only 25 bbls. from the same depth. The company dropped No. 1 Hy. Rose, Section 31-23-11, which it had planned to deepen from 2,680 feet, and instead moved rig to No. 2 on the same lease which it will deepen instead from 3,070 feet. Arkansas Fuel Oil Co.'s No. 3-A Kilgore, Section 30-23-11, pumped 10 bbls. from 3,135 feet. Askew & Goodman's No. 1 Roberson, NE cor. SW SW, Section 25-23-12, seems to have marked the northwest corner of the present producing area of the district, getting salt water at 3,280 feet after a previous water test which also developed a small show of oil and gas at 3,167 feet.

National Drilling & Producing Co. plugged back from 3,181 feet, where it got salt water, to 2,960 feet on No. 1 Matlock, Section 26-23-11, and is arranging to shoot for a test in the original Carterville pay. Magnolia Petroleum Co.'s No. 2 Roberson in Section 26-23-12 swabbed 12 bbls. of oil at 2,940 feet and if further swabbing fails to improve the showing will drill on to the 3,160-foot level. Arkansas Fuel Oil Co.'s No. 1 Bain, Section 31-23-11, which had 75 feet of oil in the hole from 3,208 feet, bailed dry and is temporarily abandoned.

Holly Disappointment

Another was added to the long list of disappointments in Holly when W. C. Clark and others' No. 1 Nabors, a wildcat in Section 17-13-13, 2 miles south of the pool's four producers and half that distance south of the nearest failure, tested dry and was abandoned at 2,812 feet. Lacy Oil Co.'s No. 1 Sample, in the NE cor. NE NE, Section 1-13-14, 1½ miles west of the producers, got salt water on a drill stem test at 2,916 feet but is drilling on. Odell & Lawton's No. 1 Tidwell-Tull, SE NW, Section 11-13-14, 3 miles southwest of the producers and half a mile northwest of their 40,000,000-foot gas well, topped the Nacatoch at 1,236 feet, the chalk at 1,500 feet and is drilling out at 1,850 feet. Two wildcats south of Zwolle were abandoned as dusters by Pelican Natural Gas Co., No. 2 Louisiana Long Leaf Lumber Co., C NE, Section 20-7-12, 3 miles south of production, at 2,935 feet, and No. 2 Sabine Lumber Co., NW SE, Section 12-7-12, 2½ miles southeast of the discovery well, at 2,700 feet. The former had a small amount of gas at 2,707 feet and 50 feet of fluid, 10 per cent oil, at the total depth.

Daily Average Runs

There was a general decline in daily average runs from the field this week but the increase in those pools that showed any gain was enough to hold the decline to 245 bbls. for the entire division. Total runs averaged 95,125 bbls., compared to 95,370 bbls., Louisiana runs of 39,530 bbls. being 510 bbls. less than last week and Arkansas' 55,595 bbls. was an increase of 265 bbls. Daily average runs from the several pools were:

NORTH LOUISIANA

Caddo, light	9,515
Caddo, heavy	2,445
Homer	3,520
Haynesville	4,740
DeSoto-Red River	3,040
Elm Grove	435
Bellevue	650
Cotton Valley	2,020
Urania	5,230
Pleasant Hill	500
Sarepta-Carterville	3,220
Zwolle	2,960
Holly	1,250
Total North Louisiana	39,530
Last week	40,040
Decrease	510

ARKANSAS

El Dorado	4,170
Smackover, light	5,160
Smackover, heavy	37,810
Stephens	930
Nevada County	1,000
Lisbon	950
Champagnolle	4,410
Bradley	65
Mount Holly	100
Urbana	1,000
Total Arkansas	55,595
Last week	55,330
Increase	265
Both states	95,125
Last week	95,370
Decrease	245

Monroe and Richland

Monroe and Richland gas areas had their usual gas completions, Union Parish furnishing Monroe district's two wells.

(Continued on Page 134)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA
AVOYELLES PARISH

Company, farm and location—	Remarks—
R. E. Tippett's No. 1 Chateline, NE NE, Sec. 34-1n-3e.	Cored S.W; sand 3,140-47 ft; drlg. S.W. sand 3,400 ft; S.D. 3,410 ft.

BIENVILLE PARISH

Ark.-La. P. L. Co.'s No. 1 K. D. Gardner, 660 ft. S, 660 ft. W, NE cor., Sec. 22-16-10	Began drlg. July 7; cmtd. 10-in. 130 ft; drlg. gumbo 1,550 ft.
Ark.-La. P. L. Co.'s No. 1 O. G. Thomas, 660 ft. S, 700 ft. W, NE cor. NW NE, Sec. 22-16-10	Began drlg. July 7; cmtd. 10-in. 154 ft.
W. A. Nichols et al's No. 1 McDermott, 660 ft. S, 660 ft. W, NE cor. NE NE, Sec. 28-18-6	Tested dry 2,050 ft; drlg. sandy shale 2,270 ft.

BOSSIER PARISH

Andrews & Davelin's No. 1 Nattin, 100 ft. N, 250 ft. W. C. Sec. 15-22-14	Coring 1,117 ft.
Autrey Oil Co.'s No. 1 Johnson, 1,120 ft. N, 200 ft. E, SW cor. NW, Sec. 34-19-11	Derrick.
Autrey Oil Co.'s No. 1 McDade, 200 ft. S, 200 ft. E, C, Sec. 28-19-11	Derrick.

CADDO PARISH

Falcon Oil Co.'s No. 1 Oden, NE cor. SE NE, Sec. 19-19-14	Reported June 4 dry and abd. by N. Pharis et al; O.W.D.D.; arranging to deepen; 4,409 ft.
L. B. Mawk's No. 1 Swann, 440 ft. N, 200 ft. E. SW cor., Sec. 23-21-14	S.D. for fuel; T.D. 700 ft.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W. SE cor. NE, Sec. 33-23-16	40 ft. Oolitic lime showing gas; cmtd. 6⅝-in. 5,165 ft; T.D. 5,330 ft.

CATAHOULA PARISH

Nick Barbare et al's No. 1 L. McGraw, 150 ft. N, 150 ft. W, SE cor. SW NW, Sec. 30-10-9	Began drlg. June 11; cmtd. 10-in. 60 ft; drlg. 360 ft.

(Continued on Page 106)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA
BOSSIER PARISH—BELLEVUE

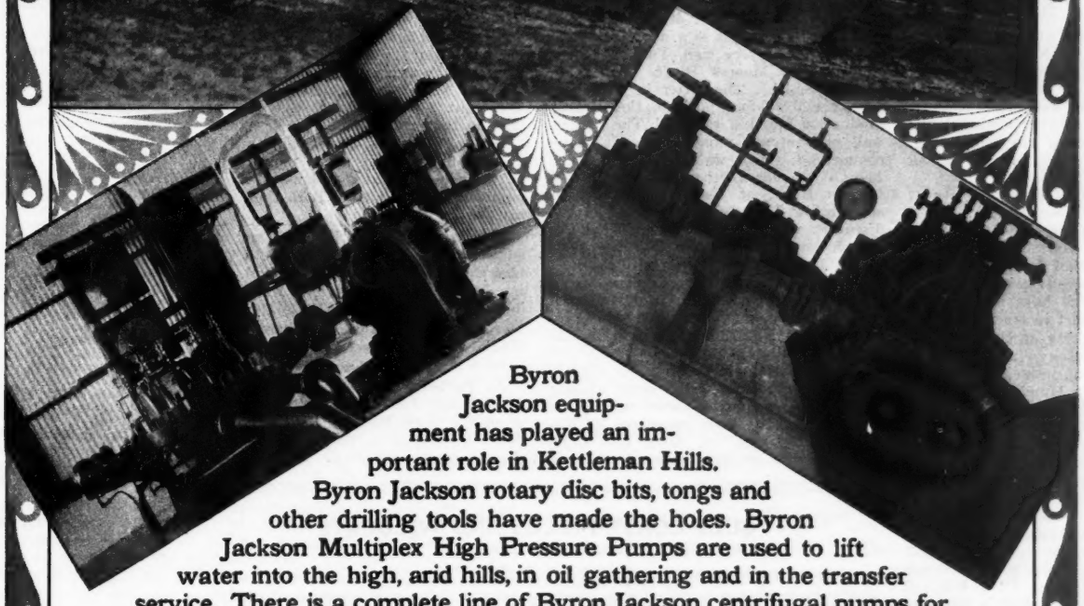
Company, farm and location—	Remarks—
H. I. Morgan's No. 5 Wetherbee, 1,120 ft. N, 200 ft. W, SE cor., Sec. 21-19-11	Began drlg. July 5; cmtd. 10-in. 110 ft; drlg. 640 ft.

BOSSIER PARISH—CARTERVILLE

Ark. Fuel Oil Co.'s No. 1 Bain, 330 ft. N, 330 ft. E, SW cor. NW SW, Sec. 31-23-11	75 ft. oil 3,170 ft; tested dry 3,208 ft; T.A.
Ark. Fuel Oil Co.'s No. 2 Bain, 300 ft. S, 300 ft. E, NW cor. SW, Sec. 31-23-11	Rig up.
Ark. Fuel Oil Co.'s No. 4-B Barnett, 330 ft. S, 330 ft. W, NE cor. NW NE, Sec. 36-23-12	Cmtd. 6⅝-in. 3,120 ft; T.D. 3,151 ft.
Ark. Fuel Oil Co.'s (formerly Muslow Oil Co.'s No. 1 Floyd, 990 ft. S, 330 ft. W, C, Sec. 25-23-12	W.O.S.R. 3,176 ft.
Ark. Fuel Oil Co.'s No. 1 Ramsey, 557 ft. S, 330 ft. E, C, Sec. 31-23-11	W.O.S.R. 3,171 ft.
Del.-La. Dev. Co.'s No. 6 Bollinger, 330 ft. S, 220 ft. W, NW cor. Lot 17, in Lot 16, Sec. 31-23-11	Full oil; W.O.S.R. 15 ft. broken sand; T.D. 3,217 ft.
Greenwood Prod. Co.'s No. 2 Bollinger, 990 ft. W, 330 ft. S, NE cor. NE SE, Sec. 36-23-12	Cmtd. 6⅝-in. 3,138 ft; 5-ft. sand; W.O.S.R. 3,173 ft.
Gulf Ref. Co.'s No. 1 Alluma, 990 ft. N, 330 ft. W, SE cor., Sec. 36-23-12	D.S. stuck 3,203 ft.
Magnolia Pet. Co.'s No. 2 Matlock, 330 ft. S and W. NE cor. SE SW, Sec. 25-23-12	W.O.S.R. 3,188 ft.
Magnolia Pet. Co.'s No. 3 Matlock, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 25-23-12	Cmtd. 8⅛-in. 3,132 ft; T.D. 3,179 ft; arranging to deepen.
Nat. Drlg. & Prod. Co.'s (was Lide et al's) No. 1 Matlock, E, NW cor. SW NE, Sec. 26-23-12	Cmtd. 8⅛-in. 2,928 ft; swbng. 12 bbls. 2,940 ft.

(Continued on Page 126)

KETTLEMAN HILLS



Byron Jackson equipment has played an important role in Kettleman Hills. Byron Jackson rotary disc bits, tongs and other drilling tools have made the holes. Byron Jackson Multiplex High Pressure Pumps are used to lift water into the high, arid hills, in oil gathering and in the transfer service. There is a complete line of Byron Jackson centrifugal pumps for every use in the oil industry. Write for bulletin and Pipe Line Friction Chart.

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Pierce Junction Extended Northwest

West Side of Humble Pool Proved for Important Production. Deep Sand Completions at Refugio and Barbers Hill

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., July 14. — A substantial extension of production on the northwest flank of Pierce Junction, further proving up of the west side of Humble for important production, and the addition of a number of deep sand completions at both Refugio and Barbers Hill were among the chief developments in Gulf Coast territory late in the week. Gulf Production Co.'s No. 1 McFadden, which was completed early in the week as the second producer at Moss Bluff, has been held to a daily flow of not more than 100 bbls. although it had an initial output estimated at 1,000 bbls. daily.

Other completions of the week included a 3,500-bbl. well at Vinton, two good producers at Sulphur which came in early in the week, one small well at Markham, an extension of the new Esperson Field, Liberty County, a workover at Spindletop and another at Boling. The latter, The Texas Company's No. 12-A Taylor, which late in 1928 extended production on the south side of Boling by coming in flowing 2,000 bbls. daily from sand at 4,031 feet, started flowing again at the rate of 3,000 bbls. daily after reworking. For some time it has been pumping around 50 bbls. daily.

The abandonment of deep wildcats at Cypress and Cedar Bayou, Harris County, Shepherds Mott in Matagorda County, and Wax Lake St. Mary Parish, Louisiana, marked additional failures to prove up some of the numerous geophysical salt dome prospects which have been discovered on the Gulf Coast in recent years.

Increased Activity at Humble

An increased activity in drilling to prove up the line of production around the west side of the Humble Dome, and on the northwest and north side of the dome, was noted during the week. The work at Humble also was further emphasized by the starting up of an active development of the sulphur deposits which recently were discovered on the northeast side of the old cap rock area, in that section known as Moonshine Hill.

At Pierce Junction, Superior Oil Corp.'s No. 2 D. F. Boyles was completed late in the week flowing 1,100 bbls. of pipe line oil daily on a half-inch choke from sand at a total depth of approximately 3,870 feet. The well is flowing from 35 feet of sand, that amount of 6⅝-inch screen has been set. Pressure of the well is 450 pounds.

The importance of this well is that it lies a considerable distance north of production on the west side of the dome, being on the northwest flank between the west side and the north side pools. It thus proves an additional link in the closing line of production around the Pierce Junction Dome. Work at this dome has been at low ebb for many months, although a year ago this field was among the most active on the Gulf Coast.

Sun Oil Co. added another good producer on the west side of Humble in its No. 7 Bender, Block C, Lot 2, Bender South Addition. This well, with two joints of screen at 4,353 feet, flowed initially at the rate of 2,100 bbls. of pipe line oil daily. Its completion followed those earlier in the week of Rio Bravo Oil Co.'s No. 1 fee and No. 2 fee, in the same area, the former flowing 350 bbls. at 3,754 feet and the No. 2 flowing 1,800 bbls. from sand at 3,958-87 feet.

The latter well moved the field slightly toward the south in the direction of the production on the south side of the dome over a mile distant. Sun's well is between two producers but closes a gap. Sun is drilling on No. 8 Bender and has derricks up or locations for Nos. 9, 10 and 11, while Rio Bravo Oil Co. is starting No. 3 fee and No. 1 H. E. and W. T. A half dozen new tests are starting up on the extreme northwest flank of the dome, where sizable production has been developed this year.

On the extreme south of Humble, Benedum & Trees have abandoned No. 1 Foley, drilled to a total depth of 8,181 feet. This test, the deepest by far of any ever drilled at Humble, is among the deepest drilled on the entire Gulf Coast. The deepest hole on the Coast is The Texas Company's No. 5 Rayne heirs on the southeast side of the Jennings Dome, Acadia Parish, Louisiana. Still drilling, it is below 8,450 feet.

Esperson Field Test

In connection with deep holes on the Gulf Coast, Cranfill-Reynolds Oil Co.'s No. 1 Vadjak at the new Esperson Field of western Liberty County tested a broken sand and shale at 7,386 feet late in the week and flowed mud and wash water. It had 410 feet of screen set at that depth. This test is a north offset to the field's discovery well, Yount Lee Oil Co.'s No. 1 Moores Bluff (drilled by Harvey Smith). The latter is producing from the 3,300-foot horizon, the deepest production found at the field. The Vajdak well encountered numerous sands, none commercial, and is waiting orders. Yount Lee Oil Co. has another deep test, No. 3 Moores Bluff, at Esperson, drilling in shale below 7,020 feet. It is south of the discovery well. Cranfill-Reynolds Oil Co. abandoned another deep Esperson test, No. 5 Esperson. It tested salt water at 5,405-35 feet, after being deepened from the 2,400-foot sand, where it was a small well. This company got a 600-bbl. producer in its No. 13 Esperson in the 3,300-foot sand.

Refugio Passing

A series of new wells, none of any consequence from a new production standpoint, have been completed at Refugio in the past few days. This field, apparently is dropping from the picture rapidly. Although a steady number of rigs is kept active and there is considerable territory around that area for possible further deep sand development, the new production being brought in is spotted and not sufficient to check the steady decline. Heavy losses in production are being suffered in the older 3,700-foot field, where a high daily output was built up rapidly by townlot drilling but where, with the limits of the field reached, a reaction to the former excessive drilling is being felt with no new wells coming in to hold the daily average.

Four 5,500-foot sand wells were completed at Refugio: Morgan Oil Corp.'s No. 4 O'Connor, Pearson Properties' No. 2 Ryals, Houston Oil Co.'s No. 1 O'Brien, Block 5, and Indépendent Oil & Gas Co.'s No. 1 Mercy Academy. The latter was a workover being plugged back to 5,382 feet to shut off water. The four wells had a combined initial flow of only 1,280 bbls. Each offers a slight extension to the field.

Houston Oil Co.'s No. 1 Strauch, Block 20 of the townlots, Saturday had not been brought under control after blowing wild since June 25. Thirteen and three-eighths-inch casing with a die nipple and valves was connected but the well split a nipple below the gate preventing the well from being closed in.

Moody Seagraves Producing Co.'s No. 2 O'Brien, which also was blowing wild at the close of the previous week, has been put under control. Both these wells are in the deep sand.

Three wells in the 3,700-foot sand were added the past week: Independent Oil & Gas Co.'s No. 2-C J. F. B. Heard, flowing 50 bbls. at 3,690 feet; Union Producing Co.'s No. 2 J. F. B. Heard, 78 bbls., 3,657 feet, and Houston Oil Co.'s No. 13 P. H. Rooke.

At Barbers Hill

At Barbers Hill the only completions were Yount Lee Oil Co.'s No. 7 Woodward and Mills Bennett Production Co.'s No. 3 Gulf Higgins, both in more or less proved territory on the southeast side. Yount Lee Oil Co.'s No. 5 Richardson, on the southwest flank, started during the drilling play following the completion of the same company's No. 1 Zadie Fisher, the discovery well, has gone into salt, being too close into the dome. Mills Bennett Production Co.'s No. 3 E. W. Barber, a wildcat on the north side, is another well to drill through salt at Barbers Hill and now is drilling in sand rock showing oil at 3,200 feet. The bit passed through approximately 1,600 feet of salt, believed to be a record.

Vinton Petroleum Co.'s No. 7 Matilda Gray, Vinton, Calcasieu Parish, Louisiana, was completed flowing 3,500 bbls. daily at 2,899 feet, marking another producer in the series of good wells being brought in on this lease.

Daily Average Production

Daily average production of Gulf Coast fields for the week ended July 12 was:

SOUTHEAST TEXAS

Allen	37
Barbers Hill	18,707
Batson	1,194
Big Creek	4,057
Blue Ridge	1,771
Brenham	145
Boling	1,117
Clay Creek	1,433
Damon Mound	685
DeWalt	12,137
Fannett	878
Goose Creek	4,659
Hankamer	2,525
High Island	918
Hull	8,270
Humble	17,019
Jasper County	20
Lost Lake	405
Markham	305
Moss Bluff	50
Nash	299
North Dayton	2,139
Orange	2,001
Orchard	2,511
Pierce Junction	10,811
Port Neches	1,903
Raccoon Bend	12,156
Refugio	33,270
Esperson (Sheeks)	2,117
Saratoga	1,105
Sour Lake	2,300
South Liberty	4,262
Spindletop	18,160
West Columbia	5,624
Total Southeast Texas	174,990
Week ending July 5	179,406
Decrease	4,416

SOUTH LOUISIANA

Anse La Butte	32
Bayou Blue	55
Bayou Bouillon	156
Black Bayou	580
Edgerly	562
Jennings	2,598
Hackberry	3,562
Lake Barre	607
Lake Pelto	133
Lockport	2,881
Port Barre	3,182
Sorrento	179
Starks	514
Sulphur	3,650
Sweet Lake	105
Vinton	7,838
Welsh	130
White Castle	1,234
Total South Louisiana	27,978
Total week ending July 5	25,017
Increase	2,970
Total Gulf Coast	202,968
Total week ending July 5	204,423
Decrease	1,455

Moss Bluff

Gulf Production Co., since the completion of its No. 1 McFadden early in the week at Moss Bluff, Liberty County, has made location for No. 2, which is 400 feet north and 175 feet west of No. 1. Gulf's new producer at Moss Bluff was the second producer on that dome, being on the extreme east flank and a north offset to Humble Oil & Refining Co.'s No. 6 Sterling, the discovery well, which has been shut in since its completion last January. The Gulf well, which had an initial flow of 1,000 bbls. daily on a half-

(Continued on Page 134)

GULF COAST FIELDS AND WILDCATS

Week Ended July 12

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 10 Barrow, southwest. Drlg. sand showing oil 4,582 ft.
Mills Bennett Production Co.'s No. 3 E. W. Barber, north. Drlg. sand rock 3,200 ft.
Mills Bennett Production Co.'s No. 3 Gulf-Higgins, southeast. Comp. flowing 850 bbls. ½-inch choke 5,248 ft.
Mills Bennet Prod. Co.'s No. 1 Henry Fisher, southwest. Rig.
Mills Bennett Production Co.'s No. 2 Fisher, southeast. Drlg. hard sand 4,696 ft.
Mills Bennett Prod. Co.'s No. 4 Gulf-Higgins, southeast. Rig.
Humble Oil & Ref. Co.'s No. 6 fee, west. Drlg. sand and shale 5,274 ft.
Humble Oil & Ref. Co.'s No. 7 Mayers fee, west. Rig.
Humphreys Corp.'s No. 1 Fitzgerald, north. Drlg. sand and boulders 609 ft.
Humphreys Corp.'s No. 1-B Barber, north. Drlg. sand and lime 1,442 ft.
Humphreys Corp.'s No. 9-A Kirby, northwest. Drlg. shale 3,140 ft.
Humphreys Corp.'s No. 6-A Barber, northwest. Drlg. gumbo and lime 2,335 ft.
Humphreys Corp.'s No. 7-B Kirby, northeast. Temporarily abandoned.
Humphreys Corp.'s No. 8-B Kirby, northwest. Rig.
Humphreys Corp.'s No. 2 Scott. To pump.
Humphreys Corp.'s No. 2-H Kirby (workover). Cored hard sand 6,023 ft.
Humphreys Corp.'s No. 3-H Kirby (workover). Swabbing.
McAlbert Oil Co. No. 1 Woodward (workover). Oil sand 5,235 ft.
McAlbert Oil Co.'s No. 7 Woodward. Drlg. sand and lime 4,925 ft.
Rio Bravo Oil Co.'s No. 1 fee, southwest. Location.
Sinclair Oil & Gas Co.'s No. 3 McKinney fee. Shale 6,597 ft., reaming.
Sinclair Oil & Gas Co.'s No. 5 McKinney Fee, southeast. Derrick.
Sinclair Oil & Gas Co.'s No. 7 Wilburn, southeast. Drlg. sand and shale 5,057 ft.
Sun Oil Co.'s No. 7 Wilburn fee, southeast. Drlg. shale and lime 3,718 ft.
Sun Oil Co.'s No. 8 Wilburn fee, southeast. Drlg. shale 3,432 ft.
Sun Oil Co.'s No. 8 J. Wilburn, southeast. Drlg. shale and lime 3,062 ft.
Sun Oil Co.'s No. 9 J. Wilburn, southeast. Drlg. sandy shale 2,300 ft.
Sun Oil Co.'s No. 6 Chambers, south. Rig.
Sun Oil Co.'s No. 1 O. K. Winfree, west. Drlg. rock 3,939 ft.
The Texas Company's No. 4 Wilburn, southeast. Cored sand and shale showing oil and gas 5,096-5,125 ft.
The Texas Company's No. 1 Williams, southwest. Derrick
Yount Lee Oil Co.'s No. 10 Chambers (workover). Rig up to deepen.
Yount Lee Oil Co.'s No. 4 Phillips, southeast. Total depth 5,137 ft.; sidetracked and drlg. sand and shale 3,608 ft.
Yount Lee Oil Co.'s No. 7 Woodward, southeast. Comp. flowing 145 bbls. oil 5,246 ft.
Yount Lee Oil Co.'s No. 8 Woodward, southeast. Drlg. sand and lime 1,740 ft.
Yount Lee Oil Co.'s No. 2 Zadie Fisher, southwest. Drlg. hard lime 5,380 ft.

(Continued on Page 132)

Open New Oil Pool in Live Oak County

New Gas Sand in Saxet Field. Core Showing Oil in Adams Gas Field in Medina County. Rapid Development in Escobas Pool

By R. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., July 14.—Houston Oil Co.'s No. 1 Boothe at the north end of the Cartwright Field in Live Oak County has opened a new oil pool at 5,252-57 feet. Saxet Oil Co.'s No. 1 Donegan in the Saxet gas field in Nueces County has opened a new gas sand at 4,068-91 feet, and Witherspoon Oil Co.'s No. 1 Adams in the middle of the Adams gas field in Medina County at 1,910 feet has a core showing oil. These are a few of the things that happened during a very interesting week in Southwest Texas.

The Houston Oil Co.'s test in Live Oak County is about three-quarters of a mile north of nearest gas production in the Cartwright Field, the casing coming from around 2,300 feet. The company drilled a number of deep tests in that part of the county on its lease block in the hope of finding oil. The others were dry. The new test is pretty deep, at 5,252-57 feet, and it filled up 300 feet of 48 gravity oil in 12 minutes on a drill stem test. The amount of oil is not large but it nevertheless has all the earmarks of a new oil pool. The Cartwright Field in Live Oak County is approximately 25 miles a little west of south of the Pettus oil pool in Bee County. It is approximately 35 miles a little south of west of the Refugio oil and gas field in Refugio County and approximately 25 miles nearly due north of the Agua Dulce gas field in western Nueces County where the Houston Oil Co. is also making a test for an oil sand.

Houston Oil Co.'s No. 1 Boothe is 300 feet from the south line and 3,000 feet from the west line of the R. Boothe 822-acre tract in the M. B. Kivlin Survey.

Saxet Deep Gas Sand

The Saxet Oil Co.'s No. 1 Donegan in the Saxet gas field west of Corpus Christi and south of the Nueces Bay opens a new gas sand in that area but the company was drilling for oil. Terms of the contract call for three 5,000-foot tests unless oil is found at less than that depth. A gas well will not satisfy the contract. Casing was set at 4,068 feet using 9⅝-inch casing to be able to drill deeper.

This is the second new gas sand found in that area within the past few days. R. S. Thompson's No. 1 Lawrence, somewhat west of the Saxet Field, came in at around 1,700 feet, ran wild and cratered and the hole was lost. The operator is now moving to a new location near the first.

Since the testing of the Saxet Oil Co.'s No. 1 Donegan an offer of $50,000 cash and $50,000 in oil for a 400-acre lease a half mile south of the test, made by one of the major companies, has been refused. One deal has been closed by Claude Heard who paid $15,000 for 100 acres three-quarters of a mile south of the R. A. Thompson No. 1 Lawrence which blew out.

The latest reports from No. 1 Donegan are that it had a rock pressure of 1,475 pounds and is estimated at 30,000,000 feet. Twenty-six feet of core was taken from 4,068 feet where casing was set to total depth of 4,094 feet and the core carried traces and a strong odor of oil but also produced a little salt water with the gas. It may be an edge well. The measurements are steel line measurements.

Witherspoon in Medina

Witherspoon's No. 1 Adams in the midst of the Adams gas field producing at around 930 feet, is down 1,910 feet. The core seems to show a little odor of oil. The test is shut down. There have been only a few tests in that district that have gone deeper than the producing sand at 930 feet.

Joe Bruner Field

Eastland Oil Co. got a 2,500-bbl. flowing well in its No. 1 C. F. Dye in the northeast end of the field where the Humble also recently got a big well. The Eastland Oil Co.'s test is 150 feet from the south and east lines of the lease in the James Hinds Survey and was completed at about 2,500 feet and in the Del Rio. The production is larger than ordinary in the field for Edwards lime wells.

Laredo District

There were two good wells completed in the Killam-Cuellar Pool and two wells and a gasser in the Escobas Pool, in Zapata County, and a whole flock of new locations announced. The Escobas Pool is now strung out over a distance of 4 miles with wells flowing from 75 to 300 bbls. a day and two exceptionally big wells which came in a couple of weeks ago flowing at the rate of 100 bbls. an hour. The Randado Pool, which has produced a lot of oil and has been one of the most profitable pools in the Laredo district, is only about 3½ miles long.

In the Escobas Pool, Alamo Drilling & Leasing Co.'s No. 2 Trevino-Claggett came in for 75 bbls. of oil, and Edgington & Niles' No. 1-B Trevino for 20,000,000 feet of gas spraying oil, and Allied Gas Co.'s No. 4-A Trevino flowing at the rate of 150 bbls. daily. There are now 47 tests listed in Zapata County.

In the Killam-Cuellar Pool, O. W. Killam completed No. 20-B Cuellar for 200 bbls., and No. 21-B Cuellar flowing 300 bbls. daily through half-inch choke.

In the new Escobas Pool development is expected to be very rapid. It costs about $5,000 to drill and complete a well and put it on the pump. The wells are completed at less than 1,300 feet and it takes only about two weeks to move in and complete a well and be ready to move out again. It is quick work and is expected to run the production of the Laredo district up somewhat in the next few months though the peak will probably be reached quickly.

In the Killam-Cuellar Pool, O. W. Killam is the chief and about the only owner of production and he is not hurrying his drilling, and development is more leisurely.

Pettus Field

There were three oil wells completed in the Pettus Field in Bee County. Houston Oil Co.'s No. 1 Beasley, in the center of Block 36 in the townsite, at 3,903 feet, was completed flowing 400 bbls. on three-sixteenths-inch choke; Humble Oil & Refining Co.'s No. 4 McKinney, at 3,976 feet, was completed flowing 600 bbls. on three-eighths-inch choke; Union Producing Co.'s No. 14 Ray was completed at 3,956 feet flowing 600 bbls. on three-eighths-inch choke.

Only one new location was announced, Hill & Hill's No. 1 Roberts, in the center of Block 16 in the Pettus townsite. The three producers completed are all centrally located with the group of producers east of the townsite.

Northern Zapata County

A spot to be watched is the northern part of Zapata County west of the Escobas and Killam-Cuellar Pools. National Oil Co.'s No. 1 Adams, about 10 miles due west of the original Mirando Valley Pool, the discovery pool of the Mirando district, has been showing so much gas that it looks likely to open something. It blew in and ran wild for a time when shut down waiting for water.

O. W. Killam has taken a lease on the Slador ranch of 10,000 acres adjoining the National Oil Co. block on the north and contracted to drill three wells on it. Other parties are arranging a test south of the National Oil Co. block and deals are pending for three others in that part of the county, evidencing that operators are expecting something to happen out that way.

SOUTHWEST TEXAS

Branyon	41
Bruner	23,933
Buchanan	195
Dale	330
Darst Creek	31,070
Kingsville	119
Larremore	30
Luling	9,450
Lytton Springs	808
Manford	350
McMullen	35
Medina	22
Mirando	11,373
Pettus	3,889
Somerset	1,538
Yoast	395
Chapman	5,645
Total	89,223
Total week ending July 5	90,319
Decrease	1,096

COMPLETIONS

Caldwell County—Bruner Pool

Gulf Production Co.'s No. 4 T. Briscoe, 150 feet north of CSL of 100-acre tract in the Raines-McCarley Survey; total depth 2,270 feet; flowing 700 bbls.

Eastland Oil Co.'s No. 1 C. F. Dye, 150 feet from S and E lines in the J. Hinds Survey; total depth 2,600 feet; flowing 2,500 bbls.

Bexar County—Dobrowolski Pool

Eckert & Son's No. 6 Sandemer, 400 feet west of No. 5 Survey 52; total depth 610 feet; pumping 6 bbls.

Brooks County—Lasater Pool

Houston Oil Co.'s No. 1 Holbein-Wormser, Palo Blanco de Maguellas Survey; total depth 6,003 feet; dry gasser at 3,814 feet; 20,000,000 feet.

Zapata County—Jennings—Muckelroy

Nordan & Morris-Allen & Morris' No. 1 E. Gutierrez, 4,410 feet SE line, 450 feet NE line, Share 4, Fansler partition, Comitas grant; total depth 1,268 feet; set 6⅝-inch casing at 1,258 feet; sand 1,258-68 feet; 350 bbls. A. L. Edgington's No. 4 I. G. Trevino, 150 feet S line, 150 feet W line, Block 26, Survey 412; total depth 1,250 feet; flowed 100 bbls. per hour first five hours.

Bee County—Pettus Field

Houston Oil Co.'s No. 1 J. R. Beasley, C of Block 36, Pettus Townsite; total depth 3,903 feet; flowing 400 bbls.

ABANDONED TESTS

Duval County—Cole Pool

Cole Petroleum Co.'s No. 69 R. Benavides, 660 feet NE line, 693 feet NW line, Cole Subdivision, Mariano Arispe grant, Block 6, Survey 20; total depth 3,501 feet.

Zapata County—Jennings Pool

R. F. Blankenship's No. 2 Garza, 425 feet W line, 425 feet N line, Block 2, Survey 413; total depth 1,623 feet (depth corrected).

NEW LOCATIONS

Bee County—Pettus Field

Hill & Hill's No. 1 Roberts, C Block 16, Pettus Townsite; location.

Caldwell County—Bruner Pool

Humble Oil & Refining Co.'s No. 5 New, 450 feet S line, 1,350 feet W line, 85-acre tract in the J. Hinds Survey; total depth 2,205 feet; setting casing.

Guadalupe County—Darst Creek

The Texas Company's' No. 8-B C. Knoblock, 1,080 feet NE line, 150 feet SE line of 75-acre tract in the J. R. Robinson Survey; location.

Zapata County—Jennings—Cuellar

O. W. Killam's No. 1 A. Martinez, 450 feet W line, 450 feet S line, Survey 120; spudded in.

Zapata County—Jennings—Muckelroy

Alamo Drilling & Leasing Co.'s No. 3 Trevino, 510 feet S line, 150 feet W line, Block 1, Survey 66; location. Same company's No. 4 Trevino, 150 feet W line, 150 feet N line, Block 1, Survey 66; location. Grimm & Yakey's No. 1 S. Bustamente, 990 feet NE line, 150 feet NW line, Share 34, Fansler partition, Comitas grant; location. Same company's No. 1 E. Bustamente, 382 feet SW line, 150 feet SE line, Share 7, Fansler partition, Comitas grant; location. Same company's No. 2 C. Bustamente, 150 feet NE line, 150 feet SE line, Fansler partition, Comitas grant, Share 33; location. A. L. Edgington's No. 5 I. G. Trevino, 450 feet S line, 150 feet W line, Block 26, Survey 412; total depth 100 feet; drilling. J. G. Nix & R. F. Blankenship's No. 1 G. T. Montemayor, 150 feet S line, 150 feet W line, Block 1, Survey 64; location. Winch & Henne's No. 1 Jose Bustamente, 150 feet SW line, 150 feet SE line, Share 35, Fansler partition, Comitas grant. S. R. C. Co.'s No. 2 "B" F. Cuellar, 150 feet NW line, 1,290 feet SW line, Block 12, Survey 65; derrick. Wicker, Arnold & Ahler's No. 2 M. Garza, 150 feet NW line, 150 feet NE line, Block 1, Subdivision Zorro ranch,

(Continued on Page 66)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—	Remarks:
Frontier Oil Co.'s No. 1 Boynton, 1,000 ft. from S line, 3,700 ft. from E line of N. Flores Sur., 3 miles SW from Somerset Field	T. D. 2,590 ft.; drlg. in hard chalk.
Nute, Walder & Derden's No. 1 J. B. Young, 750 ft. W line, 370 ft. E line of 107-ac. tract in the Wm. Moore Sur.	Location.

BLANCO COUNTY

Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford No. 155	Spudded in.
McCreary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to NE line of J. A. Rous No. 118 Sur., 4 miles SW from Blanco City	Spudded in.

BASTROP COUNTY

Judge Batts and others' No. 1 Alexander, 1,670 ft. N of S line, 528 ft. E of W line, Blk. 3 in the W. M. Eastland Sur., 3½ miles NE from Red Rock	T. D. 2,550 ft.; shut down in shale.
Pacific Oil & Gas Co.'s No. 1 J. Spooner, 300 ft. from N line, 400 ft. from W line in the L. Lavenuz Sur., 4½ miles E from Cedar Creek	T. D. 2,125 ft.; shut down in chalk.
Pacific Oil & Gas Co.'s No. 2 Spooner, 240 ft. from W line, 4,950 ft. from S line 450-ac. tract in the L. Levering Sur., 5 miles E from Cedar Creek	T. D. 650 ft.; shut down.
Majestic Pet. Co.'s No. 1 J. M. Breeding, 160 ft. from N line, 1,020 ft. from W line of 200-ac. tract, 940 varas from W line, 1,225 varas from S line of M. Andrews Sur., 13 miles W from Smithville	T. D. 500 ft.; shut down in shale.

(Continued on Page 128)

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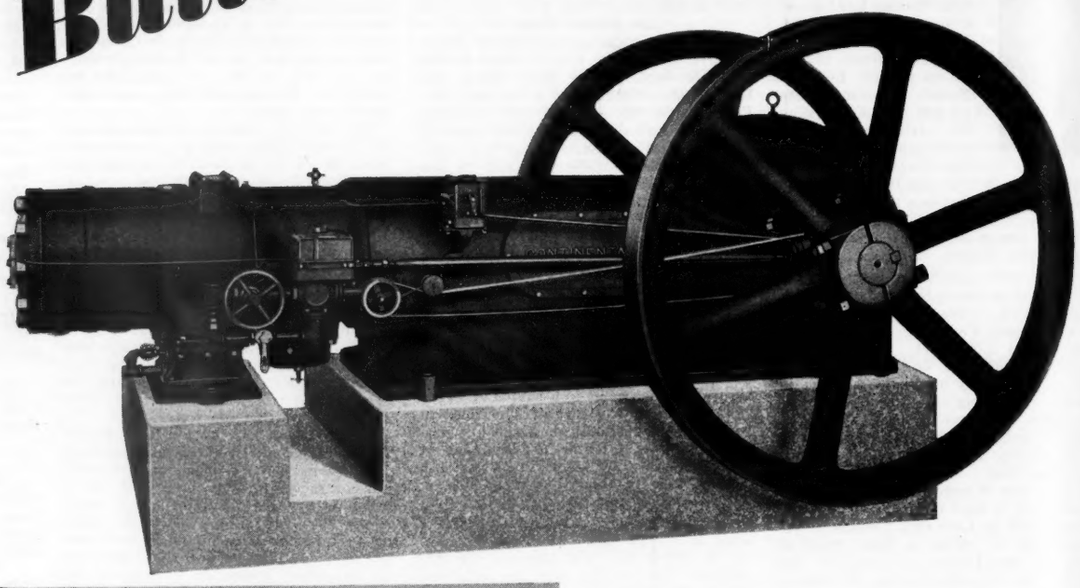

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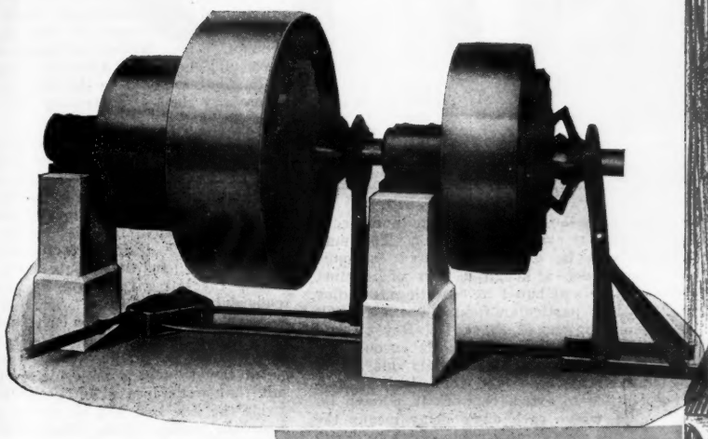

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I E N T A L

Drilling Increases at Playa Del Rey

Field Should Be Relatively Large in Area and Satisfactory in Output. Believed to Be Comparable With Torrance

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., July 12.—With drilling operations increasing from week to week, the Playa Del Rey Field of Los Angeles Basin is expected to become an important factor in State production within the next 90 days unless subsequent developments change the present outlook. The extent and productivity of this field is more or less conjectural due to the limited amount of information available, but recent completions and the present scope of work tend to indicate that Playa Del Rey should be relatively large in area and have a satisfactory production from a total standpoint. As the situation looks from a geological standpoint, Playa Del Rey should be more or less comparable with the Torrance Field as distinguished from the major fields of Los Angeles Basin, comprising Long Beach, Santa Fe Springs, Seal Beach, Inglewood and Dominguez.

Playa Del Rey, unlike the major fields of Los Angeles Basin, which are high pressure normal anticlines, is expected to be a broad flat nosed structure susceptible of resulting in satisfactory production from a field standpoint but presenting more than the usual amount of hazards from a unit standpoint due to intensive development of a town lot area underlain by an oil zone of limited thickness. The location of the structural axis at Playa Del Rey has not yet been definitely determined although careful correlation work indicates that the apex of the structure is located somewhere between the Union Oil Co.'s No. 1 Del Rey and the Ohio's discovery well with the high point possibly centering in the town lot area somewhere in the vicinity of the Mohawk Oil Co.'s No. 1 Venice. The establishment of a fault zone by the Superior Oil Co. in its No. 1 Del Rey may possibly prove of more importance from a structural standpoint than surface conditions indicate, in which event the productive limits of the field may be considerably smaller than anticipated.

Completions Centered

Completions in the Playa Del Rey Field up to the present time have been centered in a relatively limited area adjacent to the discovery well but as the scope of work increases additional data indicating the trend of the structure will be available. Completion of the Venice Oil Syndicate's 4,500-bbl. well a few weeks ago confirms the expectation that substantial production may be anticipated, although it remains to be seen what the average initial daily production of new wells will be under competitive conditions. This well is located closer to the axis of the structure than the Ohio's discovery well and consequently registered higher production. For this reason it is not at all improbable that wells more favorably located may show even higher initals during the early stages of development but this is not always a criterion of the field's potential production at a later date. Long Beach, with its enormous thickness of almost unbroken oil bearing formation approximating 2,500 feet on top of the structure, is especially conducive to long lived sustained production. Playa Del Rey, on the other hand, with only a few hundred feet of oil sand resting on top of the basement complex, does not offer such favorable conditions and will consequently show a smaller ultimate recovery.

One of the most interesting situations in connection with the Playa Del Rey Field of Los Angeles Basin is the relatively small number of drilling wells under way at the present time in spite of the fact that several wells are producing in excess of 1,000 bbls. each. There are at the present time seven producing wells, 25 wells drilling and 17 additional rigs in course of construction. This relatively small amount of development work is in direct contrast with previous town lot drilling campaigns undertaken in other fields. As time goes on the number of drilling projects at Playa Del Rey will of course increase but at the present stage development work is subnormal considering the unusually large number of town lots available for work. This may perhaps be due to depressed economic conditions, although a part of it must also be attributed to conditions peculiar to this particular field. The high sulphur content of Playa Del Rey oil and the unusually high hazards encountered due to the existence of only one highly producitve zone is not particularly susceptible to extensive work in a town lot area where each day's delay means the loss of considerable revenue due to drainage.

It is interesting to note that the major companies have refrained from participating in development work at Playa Del Rey up to the present time. Several of the larger companies have acquired holdings in the town lot area but are not expected to engage in town lot development as in every case the holdings of major companies consist of community leases instead of small widely separated units. A late property map indicates that several smaller companies have leases consisting of one and two lots scattered promiscuously throughout the town lot section. Unless subsequent developments change the present outlook, many of these parcels will never be drilled up as the limited thickness of oil bearing formation in the western end of the structure cannot possibly sustain this projected intensive development. Approximately 30 lots have recently been quitclaimed and additional leases forfeited within the past 30 days on the assumption that drilling operations would prove uneconomical. About the only solution to this would be the formation of community leases containing not less than 10 lots each.

On the basis of developments up to the present time it appears quite probable that wells located along the ocean front will stand a much better possibility of paying out than projects located further inland. The advantage is due in this instance to the drainage factor as it is generally admitted that a substantial portion of the Palya Del Rey structure extends out into the ocean. The Los Angeles City Council is considering the advisability of leasing these tidelands for development but public opinion seems to be adverse to such a policy with the result that wells located on property just inside the tide line will be able to drain a certain portion of the tidelands if this submerged property remains undrilled. These wells located along the edge of the ocean on fee owned acreage will likewise be favored even if the city council subsequently grants leases for tideland development because any wells subsequently drilled out in the open ocean will probably be located not closer than 250 feet from the mean high tide line. It is quite obvious that this additional drainage area will result in larger ultimate production than would be secured by operators drilling the town lot area with wells located closer together.

Pipe Line Connections

Although seven producing wells have been successfully completed in the Playa Del Rey Field up to the present time the Ohio Oil Co. is the only concern to have made satisfactory pipe line connections. This company recently laid a 6-inch line to the Standard Oil Co.'s El Segundo refinery and has been moving its Playa Del Rey production over to El Segundo where adequate storage facilities have been leased. The Union Oil Co. has started construction work on an additional line to handle Playa Del Rey crude and this project should be completed within the next 30 days as it only involves the laying of about 5 miles of line. It will run from its Del Rey lease and connect up with existing facilities but will undoubtedly be extended up into the town lot area at a later date if subsequent developments warrant. This will give the field two pipe line outlets, although the Ohio Oil Co. has announced that its pipe line will be used for the exclusive transportation of that company's production. The Del Rey Oil & Refining Co. is contemplating the construction of a new 6-inch pipe line to connect up with storage facilities which have been rented at the General Petroleum's Torrance refinery, but this line will probably like-

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	68,690	566,045
Fuel oil	.....	.....	.....	.....	71,950	49,950
Diesel and gas oil	65,057	9,262	.....	.....	1,984,189	913,200
Gasoline	805,888	115,127	723,657	103,380	9,946,154	10,537,320
Naphtha distillate	.....	.....	.....	.....	.....	81,750
Coastwise—						
Crude oil	163,000	23,257	459,571	65,653	7,867,806	11,805,416
Fuel oil	214,803	30,686	316,045	45,149	8,767,148	11,182,212
Diesel and gas oil	17,516	2,502	135,329	19,333	1,023,128	69,300
Gasoline	336,708	4,797	367,043	52,435	6,266,008	5,438,319
Kerosene	.....	.....	25,325	3,632	96,822	34,972
Exports—						
Crude oil	280,776	40,111	140,250	20,036	3,546,374	2,807,500
Fuel oil	399,352	57,050	474,441	67,777	9,811,618	9,919,214
Diesel and gas oil	132,562	18,937	7,693	1,099	2,463,249	1,463,609
Gasoline	455,128	65,018	618,890	77,413	8,497,282	5,552,662
Kerosene	.....	...	201,500	28,786	2,046,931	1,629,108
Lubricants	.....	.....	.....	.....	10,082	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	88,280	.....
Gasoline	.....	.....	.....	.....	641,680	1,111,318
Lubricants	.....	.....	.....	.....	5,866	69,172
Coastwise—						
Fuel oil	73,180	10,454	.....	.....	1,888,286	1,358,339
Diesel and gas oil	.....	.....	.....	.....	152,544	317,460
Gasoline	141,380	20,197	75,903	10,843	2,147,528	2,542,324
Kerosene	11,515	1,645	5,991	856	136,893	60,250
Exports—						
Crude oil	.....	.....	.....	.....	3,075	121,603
Fuel oil	.....	.....	.....	.....	481,000	395,731
Diesel and gas oil	5,514	788	.....	.....	237,504	155,474
Gasoline	41,161	5,880	266,127	38,018	2,254,184	3,005,499
Kerosene	2,492	356	8,077	1,154	380,083	382,417
Lubricants	.....	.....	.....	.....	18,672	21,899

THREE PRODUCERS AT MT. PLEASANT; SEVERAL MICHIGAN WILDCATS DRY

By Paul A. Elliott

MUSKEGON, Mich., July 14.—Three new producers in the Mount Pleasant Field of central Michigan were the only successful completions of the week. Several wildcats in different sections also were completed but were dry holes.

There were no new completions in the Muskegon Field and three western Michigan wildcats proved to be dusters in Oceana and Mason Counties, directly north of Muskegon County.

The largest of the new producers in Mount Pleasant, which together added 560 bbls. of new production, was the Pure Oil Co.'s No. 4 Lewis Thompson, NE NW NW Section 12-14n-3w, Chippewa Township, Isabella County. Dundee limestone was topped at 3,495 feet, pay at 3,527 feet and the hole was completed at 3,585 feet with 300 bbls. initial. The Stork Oil Co.'s No. 1 Sawade and others, SW SW SE Section 2-14n-3w, Chippewa Township, Isabella County, near the north extremity of the field, came in as a 200-bbl. initial producer in the Dundee. Limestone was topped at 3,515 feet, pay at 3,545 feet and the total depth 3,585 feet.

The Pure Oil Co.'s No. B-6 State, Isabella County, NW SE Section 2-14n-3w, also an edge well, made 60 bbls. initial in the Dundee, topping the limestone at 3,521 feet, the pay at 1,555 feet and finishing at 3,580 feet.

The Vestaburg Oil & Gas Co.'s No. 1 Alfred Anna wildcat, SW NE SE Section 27-12n-5w, Richland Township, Montcalm County, was abandoned at 3,530 feet.

The White River Oil Corp. has abandoned No. 4 Quinlan in Montague Township, west of the village of Montague. It was shot in the upper Traverse at 1,728 feet. It has been the only active wildcat well in the county for some time.

Manistee Wells

One of the two active wildcats in the vicinity of Manistee was dry and the other had only a slight show of oil in the Monroe formation at slightly below 2,000 feet deep this week. The Swastika Oil & Gas Co.'s No. 1 Sand Lumber Co., SW NW Section 6-21n-16w, Filer Township, Manistee County, was abandoned at 2,023 feet. Smith & Macauley's No. 1 Piellusch, NE SE Section 20-21n-16w, Stronach Township, had a show of oil at 2,004 to 2,006 feet but is nearly 200 feet lower on structure than the Swastika-Sands wells.

The Red Rock Oil & Gas Co.'s No. 1 Skidmore, SW NE Section 19-15n-18w, Golden Township, near Silver Lake, is the only active wildcat in Oceana County. It is drilling about 500 feet, just below the quicksand, which made it difficult to set drive pipe. The well was started only as a structure test to the Red rock or Berea gas.

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wise be restricted to purchase obligations of that company. In the meantime producers have been moving current production out of the Playa Del Rey Field by means of tank trucks and trailers. It is quite likely, however, that if operators in the Playa Del Rey Field ratify the existing curtailment agreement that pipe line companies will lay adequate facilities to handle future production as long as it is restricted in conformity with the agreement.

Long Beach

There were several good wells finished in the Long Beach Field during the past week, the largest of which was No. 5 Wilbur of the Shell, a recompletion which was returned to production flowing 3,410 bbls. of clean 29.9 gravity oil per day. This well, originally completed doing 300 bbls. per day from 6,375 feet, was recompleted after being plugged back to 5,200 feet and the casing perforated at that depth. McKeon Oil Co.'s No. 7 Signal, a recent completion brought in flowing 4,700 bbls. per day from 6,959 feet, has been holding up in good shape after being beaned back in conformity with the curtailment agreement. This well is at the present time making 3,150,000 feet of natural gas per day which tests indicate has a theoretical gasoline content of 4 gallons for each 1,000 feet. Oil production has been holding steadily at 2,500 bbls. per day, the allowable permitted under the agreement.

The substantial production registered by No. 7 Signal of the McKeon Oil Co. prompted the Plymouth Oil Co. to petition Umpire Neal Anderson for permission to re-establish the potential of its No. 10 Merritt, which came in several weeks ago flowing 2,955 bbls. per day from 6,961 feet. The umpire, being familiar with the fact that this did not represent a fair potential as the well was severely beaned back, acquiesced and a test was accordingly conducted under strict supervision. This well, located in close proximity to the McKeon's No. 7 Signal, tanked 5,250 bbls. during the initial 24 hours after being opened up on the potential test. In addition to the large amount of crude produced, the well is making 3,900,000 feet of saturated gas containing 5.1 gallons of natural gasoline for each 1,000 feet of gas. The Richfield Oil Co.'s No. 5 Bernstein was another good well put on production during the past week as this project was recompleted flowing 1,620 bbls. of clean 29.6 gravity oil per day.

The Dixie Oil Co.'s No. 1 Sedgwick was given a production test during the early part of the week and while the initial output, 140 bbls., showed an excessive water cut, it has subsequently cleaned up and may ultimately result in a satisfactory completion after the well has cleaned itself out. Dabney & Johnston's No. 56 Signal also registered an excessive water cut upon recompletion at 7,007 feet as the output, 224 bbls., was cutting 15 per cent. No. 2 Evans of the Italo Petroleum, another recompletion listed this week, is also cutting in excess of pipe line requirements, the output, 120 bbls. per day, containing 20 per cent water. This well, carried down to 6,866 feet and finished with a 4¾-inch oil string, failed to result in a natural flow and was consequently put on a compressor. The Ventana Oil Co. failed to complete No. 1 Signal in the deep zone at 7,025 feet and will probably be required to recement as the initial output, 130 bbls., was cutting in excess of 50 per cent.

Santa Fe Springs

Umpires Grimm and Anderson have been experiencing considerable difficulty during the past several weeks in limiting the production of crude oil in the Santa Fe Springs and Long Beach Fields and although State production is only approximately 10,000 bbls. per day in excess of the maximum allowable, these two fields are both producing greatly in excess of the maximum allowable. Long Beach, after being down within striking distance of the allowable for several weeks, has shown a substantial increase due to the recent completion of several large flowing wells. Santa Fe Springs is producing in excess of its allowable due principally to the failure of several operators to conform with the curtailment agreement. This field has been averaging around 115,000 bbls. per day for the past two weeks in spite of attempts to bring it down to its allowable of 90,000 bbls. per day.

Drilling operations at Santa Fe Springs have shown a very substantial decline during the past month and with operators not starting any new wells due to the depleted condition of the lower zones another 60 days will see only a few strings of tools in operation. During the past week the Union added a new well to its list of producers in this area by completing No. 22 Alexander, a new well flowing 386 bbls. per day from the Clarke zone at 7,930 feet. No. 59 Bell, finished at 5,225 feet, was swabbed for production yesterday but it looks wet, in which case another cement job will be necessary. The Mohawk Oil Co. finished a satisfactory completion in the Meyer zone this week when No. 6 Hathaway was brought in flowing 420 bbls. per day from 4,990 feet. The Bellview Oil Syndicate's No. 5 Grohs, a recent completion flowing 728 bbls. per day from 5,053 feet, died during the early part of the week and efforts are now being made to recomplete it. The Texas Company has finished well No. 12 on Mattern lease No. 2 in the deep Clarke zone at 7,870 feet and while it was necessary to install a compressor the initial output, 296 bbls. of clean 32.1 gravity oil, is satisfactory.

Rincon

The Chanslor-Canfield Midway Oil Co. will be delayed another two weeks in making a production test of No. 2-A Hobson, a deep well located in the extreme eastern part of the Rincon Field, due to a fire which destroyed the floor of the derrick and damaged drilling equipment. This new well, which gives indications of resulting in production at 7,479 feet, was being swabbed during the early part of the week when an accumulation of gas become ignited. While going back into the hole with a swab for the third time, No. 2-A Hobson suddenly flared up due to an accumulation gas on the floor of the derrick and severly burned two of the crew. Although it will be another two weeks before work can be started again on the production test, operators will not lose interest as this well may have picked up a new deep productive horizon which may prove of importance.

There were no wells finished in the Elwood Field of Santa Barbara County during the past week but the next 15 days should witness the completion of two or three new wells which are at present being prepared for early production. These include the Barnsdall and Rio Grande's No. 13 Bell, the Elwood Exploration Co.'s well No. 4 on tideland permit No. 90, Pacific Western's well No. 5 on tideland permit No. 92, and the Bankline's well No. 6 on tideland permit No. 89. Any or all of these projects are eligible for completion within the next 15 or 20 days. The past week was a rather quiet one as far as operations in the Ventura Avenue Field were concerned but a check indicates that this inactivity will be broken shortly by the completion of several potential producers.

Midway-Sunset

The only well finished in the Midway-Sunset Field during the current week was the Union Oil Co.'s No. 3 Houchin, located out in the Maricopa flats. This new well, bottomed at 5,448 feet, was brought in pumping 140 bbls. per day. Drilling operations are consistently declining in the Midway-Sunset Field and the Maricopa flats area, which a few months ago was the scene of considerable activity, has dropped off until at the present time there are less than 10 wells under way. The General Petroleum and the Pacific Western Oil Co. each finished a new producer in the Mount Poso Field during the current week, although neither project was put on production. The former's No. 31 Heisen, finished at 1,616 feet, and the latter's No. 7 Glide Vedder, completed at 1,514 feet, were shut in subsequent to completion without a test being made to determine their potentiality.

The completion of several satisfactory

(Continued on Page 66)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Union, No. 1 Orchard Dale, Los Angeles Co.	10- 3-11	2,080	sd. sh. drilling
Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	5,780	abandoned
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	4,078	sd. sh. drilling
Crimson Pet., No. 1 Compton, Los Angeles Co.	22- 3-13	130	suspended
Francis, Don, No. 1 Compton, Los Angeles Co.	8- 3-13	972	sd. sh. drilling
Ohio, No. 1 Moneta, Los Angeles Co.	35- 3-14	6,660	hd. sd. drilling
Guajome Oil Co., No. 1 El Nido, Los Angeles Co.	33- 3-14	rig	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	2,416	sd. sh. drilling
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12- 3-14	4,377	hd. sd. drilling
Tri-State Oil Co., No. 1 Watts, Los Angeles Co.	12- 3-14	3,147	sd. sh. drilling
Rio Grande Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,750	hd. sd. drilling
Shell, No. 1 Van Nuys, Los Angeles Co.	19- 2-15	3,479	sd. sh. drilling
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rio Hondo Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	2,402	sd. sh. drilling
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,660	suspended
Bardeen, Pet., No. 1 Puente, Los Angeles Co.	9- 2-10	1,401	hd. sd. drilling
Sherman, J. W., No. 1 Puente, Los Angeles Co.	33- 2- 8	850	suspended
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,120	shut in
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	2,548	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,950	suspended
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	5,400	sd. sh. drilling
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	8- 3-16	2,025	cleaning out
Pioneer Pet., No. 1 Newhall, Los Angeles Co.	14- 3-16	2,838	suspended
Union, No. 1 Coyote, Sansinena, Los Angeles Co.	30- 2-10	3,750	br. sh. drilling
Tureco Oil Co., No. 1 Whittier, Los Angeles Co.	29- 2-11	5,199	sd. sh. drilling
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	6,000	hd. sd. drilling
Graham & Loftus, No. 1 Coyote, Orange Co.	18- 3- 9	5,030	sd. sh. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20- 6-10	790	suspended
Standard, No. 1 Newport, Orange Co.	26- 6-10	1,014	redrilling
Fidelity Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cleaning out
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,560	suspended
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,930	suspended
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,265	cleaning out
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13- 4	2,418	hd. sd. drilling
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16- 3	2,400	gr. sd. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	fishing
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2- 8	1,549	cleaning out

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well location—	S-T-R	Depth	Status
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	4,812	br. sh. drilling
Universal Consd., No. 1 Pt. Conception, Santa Barbara Co.	30- 5-34	3,370	hd. sd. drilling
Prairie Oil Co., No. 1 Lompoc, Santa Barbara Co.	15- 7-35	3,700	sd. sh. drilling
Vaqueros Oil Co., No. 1 Purisima, Santa Barbara Co.	5- 7-33	3,005	set pipe
Fields Gasoline Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	3,704	cleaning out
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	2,177	sd. sh. drilling
Deuel Pet. Co., No. 1 Santa Ynez, Santa Barbara Co.	9- 7-30	3,098	hd. sd. drilling
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,880	suspended
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	cemented
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	1,016	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	1,026	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,965	Sespe
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	1,035	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
Ring Oil Co., No. 1 Goleta, Santa Barbara Co.	16- 4-28	4,400	sd. sh. drilling
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	525	coring
Caldwell Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,040	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,590	sd. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	4,000	hd. sd. drilling
Standard, No. 2 Casitas, Santa Barbara Co.	26- 4-25	912	sd. sh. drilling
Continental, Tideland permit No. 121, Santa Barbara Co.	33- 4-25	1,085	suspended
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	1,020	suspended
Continental, Tideland permit No. 124-A, Santa Barbara Co.	33- 4-25	418	suspended
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	1,455	suspended
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	1,034	suspended
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	1,055	suspended
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	1,054	suspended
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	1,020	suspended
Exeter Oil Co., Tideland permit No. 163, Santa Barbara Co.	32- 4-25	76	suspended
Getty, Geo. F., No. 129 Carpinteria, Santa Barbara Co.	32- 4-25	1,024	suspended
Getty, Geo. F., No. 130 Carpinteria, Santa Barbara Co.	32- 4-25	1,029	suspended
Shell, No. 5 Oxnard, Ventura Co.	14- 2-20	2,170	sd. sh. drilling
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,529	redrilling
Prairie Oil & Gas Co., No. 1 Ventura, Ventura Co.	30- 3-22	6,350	sd. sh. drilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	2,374	cleaning out
Fennell, E. A., No. 1 Lankershim, Ventura Co.	13- 4-19	1,791	suspended
General Pet., No. 1 Fillmore, Ventura Co.	6- 3-19	2,634	cleaning out
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	fishing
Camarillo Synd., No. 1 Camarillo, Ventura Co.	33- 2-20	455	suspended
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	1,014	sd. drilling
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	2,706	suspended
Milham Explin., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	suspended
Nordon Oil Co., No. 1 Buttonwillow, Kern Co.	7-29-24	1,300	abandoned
Nordon Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	rig	rigging up
Shell, No. 1 Lerdo, Kern Co.	23-28-26	4,400	sd. sh. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	4,965	testing
Shell, No. 1 Edison, Kern Co.	33-29-29	5,500	hd. sd. drilling
Pet. Sec., No. 1 Edison, Kern Co.	14-29-29	rig	rigging up
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	4,220	cleaning out
Elmer Oil Co., No. 1 Tejon, Kern Co.	15-30-30	4,280	sd. sh. drilling
Hancock Oil Co., No. 1 Jasmine, Kern Co.	23-25-27	2,665	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	4,100	sd. sh. drilling
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	505	hd. sd. drilling
Bardeen, H. A., No. 1 San Emidio, Kern Co.	18-10-23	1,140	br. sh. drilling
Bardeen, H. A., No. 2 San Emidio, Kern Co.	10-10-23	2,790	sd. sh. drilling
Stabler, W. W., No. 1 Commanche Pt., Kern Co.	4-11-18	1,600	sd. sh. drilling
Wrenn, J., No. 1 Antelope Plains, Kern Co.	32-25-17	440	sd. sh. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,619	suspended
Richfield, No. 1 Kreyenhagen, Fresno Co.	33-22-16	2,114	hd. sd. drilling
Ohio Oil Co., No. 1 Coalinga, Fresno Co.	8-21-15	mtl.	building rig
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	suspended
Fresno Madera Oil Co., No. 1 Clovis, Fresno Co.	18-22-21	4,470	suspended
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	suspended
Libby Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,425	gr. sd. drilling
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,941	cleaning out
Union, No. 1 King City, Monterey Co.	8-22- 8	3,250	suspended
Standard, No. 1 King City, Monterey Co.	23-22- 7	4,630	fishing
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	181	suspended
O'Donnell, J., No. 1 Dudley Ridge, Kings Co.	7-23-20	4,310	recemented
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Wellport Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	3,940	suspended
Twin States Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	3,880	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, San Joaquin Co.	3- 2-10	3,535	suspended
Orinda Pet., Well No. 1, Contra Costa Co.	32- 1- 3	590	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	4,022	recemented
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	930	testing
Western Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	rig	rigging up
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	660	hd. sd. drilling

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Hobbs Potential Passes 120,000 Bbls.

On Short Tests Nine Wells Averaged 9,220 Bbls. Per Day. Rotary Drilling Record in Rocky Mountain Area

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., July 14.—Nine completions in the Hobbs Pool in Lea County, New Mexico, jumped the developed potential production of the field on July 8 up to 120,000 bbls. a day. On short tests the new wells flowed at the rate of an average of 9,220 bbls. each per day. The production available already is in excess of capacity of pipe lines completed and building into the field. The best completion was the Tidal Oil Co.'s No. 1 Grimes, which flowed 840 bbls. the first hour, or at the rate of 20,160 bbls. per day. The Gypsy Oil Co.'s No. 1 Grimes was a close second, making 1,440 bbls. in two hours, after which it was shut in. The Texas Pacific Coal & Oil Co.'s No. 1-G State, which gauged 3,094 bbls. in 10¾ hours, marked a slight extension of the pool to the west. The Amerada Petroleum Corp. had two completions, the Midwest Refining Co., two, and George F. Getty, one. The Midwest's No. 1 State, 4 miles to the southeast of the big play, was a surprise, putting 1,240 bbls. into the tank in 17 hours. Five new locations were announced. The Maljamar Oil & Gas Co. has a producer in its No. 3 Baish in the Maljamar Pool. Northwestern New Mexico is showing an increase in activity. The Continental Oil Co. will drill another well to the Pennsylvanian on the Rattlesnake Dome.

In Colorado, the Texas Production Co. is establishing a record for rotary drilling for the Rocky Mountain area in its No. 12 Knowlton. A Pennsylvanian test is to be drilled in La Plata County. The Pole Mountain test of the Producers & Refiners Corp. in Jackson County has 3,750 feet of water in the hole. One well commenced spudding in Archuleta County and another in Huerfano County.

A substantial show of high-grade green oil has been encountered in the Texas Production Co.'s No. 1 State, on the Alkali Butte Dome in Fremont County, Wyoming, and the Ohio Oil Co.'s No. 1 Easton, on the Byron Dome in Big Horn County, is showing oil and gas, both being important tests. The Midway Dome test in Natrona County is drilling near the first objective. The Osage Field had another good completion in the Lambie Oil Co.'s No. 1 Bock, which flowed 160 bbls. in seven hours.

NEW MEXICO

Hobbs Area—Lea County

An estimate made a few weeks ago by the head of one of the large oil companies that the Hobbs Pool in Lea County, southeastern New Mexico, would have a developed potential production of 200,000 bbls. a day within four months was looked upon by some of the operators at the time as being too large. Developments the past week indicate that this figure will be reached in much less than the time named and that it may be too small instead of too large. Nine wells reached the pay the past week and on July 8 the estimated capacity of the wells in the field, if opened, was boosted to 120,000 bbls. a day, or 60 per cent of the original estimate, with a number of wells drilling near the pay and three months in which to go. This estimate of 120,000 bbls. open flow capacity is for 24 wells completed up to date, including a small edge pumper in the southeastern end of the pool. When the Humble Oil & Refining Co.'s No. 1 Bowers was completed three months ago and made 7,500 bbls. a day, it furnished what was believed to be a fairly good index as to the probable size of the wells. The recent completions came in flowing at a rate above that figure. The nine new wells reported this week flowed at the rate of 82,983 bbls. a day, or an average of 9,220 bbls. per day per well. These figures, however, furnish merely an indication as most of the wells were gauged for only an hour or two. In any event, enough is now known to warrant the statement that the Hobbs Pool is a big pool and it is being developed very fast.

Most of the wells are being shut in after a short test as only one pipe line is operating, this being the Humble Oil & Refining Co.'s 8-inch line from out of Winkler County. The Atlantic Pipe Line Co.'s 10-inch line from Midland, Tex., has been laid, but has not been entirely buried and connections have not yet been made. The Shell Pipe Line Co.'s 10-inch line from Winkler County is being rushed as fast as possible, but work has not yet gone beyond the preliminary stage on the pumping station. It is estimated that the three lines will have a capacity of 100,000 to 105,000 bbls. a day. The field already has that much oil available if the wells are opened, but it is to be remembered that all of these lines are extensions of systems serving West Texas pools and they will have to take care of the Texas oil as well as that from New Mexico. It is apparent that wells will have to be pinched in or more lines built as the operators are not erecting any big storage.

Big Producers

One of the best completions to date was the Tidal Oil Co.'s No. 1 Grimes, SW NE SE, Section 29-18-38, which found the pay at 4,040-4,160 feet and flowed 840 bbls. the first hour, or at the rate of 20,160 bbls. per day. This well is located a mile east and a little south of the Humble's No. 1 Bowers and makes the territory to the northeast very attractive. A line from the northwest to the southeast through the area so far proven will show that the Tidal well is about half a mile to the east of the line and indicates a broadening out of the productive area to the northeast.

The Gypsy Oil Co.'s No. 1 Grimes, NW NW NW, Section 32-18-38, half a mile to the south and a little east of the Humble's No. 1 Bowers and a mile southwest of the Tidal's No. 1 Grimes, was completed at 4,160 feet and made 1,440 bbls. in two hours open flow, or at the rate of 17,280 bbls. a day. After flowing for two hours it was shut in, but it is reported that the Humble Pipe Line Co. will take 5,000 bbls. a day from this well temporarily. This well is in the trend of production and did not prove any new territory.

The Ohio Oil Co.'s No. 1 State-Northrup, joint with the Independent Oil & Gas Co., in the NE NW SE, Section 32-18-38, an offset on the south to the Shell Petroleum Corp.'s No. 1 State, which made 5,347 bbls. natural the first 24 hours after completing, is rated as a 7,200-bbl. well. It topped the pay at 4,000 feet and was completed at 4,175 feet. It gauged 2,140 bbls. the first seven hours, back flow. The oil tested 36.5 gravity. It was shut in after testing for seven hours.

The Texas Pacific Coal & Oil Co.'s No. 1-G State, SE cor., Section 24-18-37, an offset on the west to the Shell Petroleum's No. 1 McKinley and a diagonal offset to the Amerada's No. 1 McKinley, topped the pay at 4,050 feet and was drilled to 4,214 feet. The 3-inch tubing was run to 4,199 feet and the well gauged 3,094 bbls. the first 10¾ hours. It made 377 bbls. open flow the first hour and 446 bbls. the second hour. The gas is estimated at 10,000,000 to 15,000,000 feet a day. This well is the farthest to the northwest in the field and from its location to the Prairie's No. 1 Selman on the southeast is 6 miles.

The Amerada Petroleum Corp. had two completions in its No. 1 McKinley, NW cor., Section 30-18-38, a diagonal offset on the southeast to the Texas Pacific well, and its No. 2 McKinley, SE cor. NW of Section 30. Its No. 1 McKinley was completed at 4,230 feet and gauged 5,094 bbls. in 16 hours. The oil tested 35.4 gravity and showed 2.2 per cent basic sediment and water. Its No. 2 McKinley topped the pay at 4,075 feet and was drilled to 4,200 feet and made 400 bbls. the first hour.

George F. Getty, Inc.'s No. 1 McKinley, SW cor. NE, Section 30-18-38, an offset on the east to the Amerada's No. 2 McKinley, was drilled to 4,200 feet and found the pays at 3,932-65 and 4,116 feet. It flowed 480 bbls. per hour for a short test.

The Midwest Refining Co.'s No. 86 State, SE NE NW, Section 15-19-38, 4 miles southeast of the wells named, was completed at 4,178 feet, 8 feet in the pay, and flowed 423 bbls. the first 24 hours. It is an offset on the west and north of producers. Its No. 1 State, NE cor. NW, Section 15, an offset on the north to No. 13 State, was a much better well. It topped the pay at 4,135 feet and made 1,240 bbls. in 17 hours, after which it was shut in.

New Locations

Five new locations were made as follows:

The Ohio Oil Co.'s No. 4 State-Northrup, NW cor. SE, Section 32-18-38, an offset on the south and east to locations made by the Gypsy and Shell companies. The Gypsy Oil Co.'s No. 3 Grimes, NE cor. SW, Section 32-18-38, and its No. 4 Grimes, NE cor. NW, Section 32-18-38. The last named will call for three more locations by the Continental, California and Amerada companies. The Skelly Oil Co.'s No. 1 Fowler, NW cor., Section 31-18-38, is its first location in the field. The California Co.'s No. 2 State, NE SW SE, Section 29-18-38, is one location south of its No. 1 State, which is nearing the pay.

The Shell Petroleum Corp.'s No. 1 State, SE SW NE, Section 32-18-38, which was drilled in several weeks ago, was finally completed at a total depth of 4,175 feet. The oil was at 4,000-4,175 feet. It made 5,347 bbls. natural and 62,000,000 feet of gas the first 24 hours. The elevation is 3,638 feet, the base of the salt was at 2,489 feet and the top of the brown lime at 2,753 feet.

Drilling Operations

Routine drilling includes the following:

Landreth Production Co.'s No. 1 State, SW cor. SE, Section 7-18-38, is swedging the 10-inch which collapsed at 2,900 feet. Total depth is 3,083 feet. This is the farthest north of any well drilling in the field.

California Co.'s No. 1 Grimes, NW SE SE, Section 29-18-38, is shut down in anhydrite and lime at 3,527 feet for repairs.

(Continued on Page 117)

NEW TURNER VALLEY PRODUCER RANKS WITH BIG WELLS OF FIELD

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, July 12.—In the Central Turner Valley Field, Royalite Oil Co.'s No. 11, LSD 10, Section 12-20-3w5, blew into production in the Madison lime at 4,047 feet with a wet gas flow of 35,000,000 feet a day. Crude naphtha recovery will be around 450 to 500 bbls., putting the well in a class with the big producers. Unofficial reports that the well had increased to 50,000,000 feet with around 1,500 bbls. potential recovery are denied by Imperial Oil, Ltd., officials. Royalite's No. 11 is west of No. 4, the first and for many years the largest crude naphtha producer. No. 11 for some time took a small light crude production from a sand at 2,472 feet, but recently it was decided to deepen to the lime.

Shareholders of Wellington Oil & Gas Co. held their annual meeting at Calgary recently. R. A. Brown was elected president, succeeding A. M. Robertson. Other officers are: Managing director, W. A. Carmichael; secretary, L. Phillips; treasurer, R. M. Van Bibber; directors, Arthur Henderson, Charles Comba and A. King.

In Section 4-19-2w5, Mercury Oils' No. 3, LSD 2, is reported making 190 to 210 bbls. a day from the lime at 5,275 feet. This production has been maintained since the wet gas was first run through the separators. Mercury's No. 2, LSD 12, blew back into production recently and is reported making 125 bbls., about 25 bbls. better than before it bridged.

Central Turner Valley

In the Central Turner Valley, Calmont Oils' No. 1, LSD 2, Section 1-20-3w5, is 227 feet in the lime at 5,681 feet with some gas but will drill a little deeper. British Dominion Oil Corp.'s No. 2, LSD 6, Section 12-20-3w5, delivered 2,798 bbls. of crude naphtha in June, valued at $10,123, with 132 bbls. of naphtha and light crude held over. Production since the well was brought in aggregates 1,152 bbls. of light crude and 18,106 bbls. of naphtha valued at $66,298.

Shareholders of Spooner Oils, Ltd., held their annual meeting at Calgary recently. The following officers were elected: President, A. G. Spooner; vice president, R. A. Brown; secretary, George Barber; directors, Hiram Spooner, Hal Morgan and Clarence Snyder. No. 1 produced 11,042 bbls. and No. 2 yielded 11,967 bbls. for the eight months ending April 30.

Spooner's No. 1, LSD 12, Section 13-20-3w5, which has been making about 30 bbls. daily from the lime at 5,260 feet, will be shot to increase production; and if this is successful, No. 2, a 60-bbl. producer in LSD 11, will also be shot. Spooner's No. 4 recently got a fair show of light crude in the Dakota sand.

Shows on Duvernay Structure

An important development has taken place on the Duvernay structure, north of Edmonton, where Alberta Pacific Consolidated's No. 1, LSD 5, Section 34-55-12w4, got a gas showing at 1,440 feet. Previous smaller shows were met at 500 and 1,310 feet. On drilling deeper, three successive crude oil shows were encountered in the lower Bentons at 1,490 feet, 1,505 feet and 1,515 feet. Shows of oil and gas have apparently been found in every sandy streak encountered. Drilling is on a structure geologized by the Canadian Exploration Co. of Denver, which has arranged for development by the Al-

(Continued on Page 119)

Pipe Line Construction News

EXPECT AUGUST UPTURN IN STEEL INDUSTRIES

By B. E. V. Luty

PITTSBURGH, Pa., July 14.—The rate of steel production decreased 8 per cent from May to June, and the present rate is about 10 per cent lower, being not materially above 60 per cent. According to precedent this should be the lowest rate of the year, the winding up of the seasonal decline. In an ordinary year the lowest rate is in the first half of July. There have been years, like 1929 and 1923, when production continued to decline, but they were not ordinary years, having heavy demand in the first half with something then going wrong. If there is an upturn it has always begun by August showing an increase over July. Prospects that there will be an upturn this time is based on an assumption that this is an ordinary year as the seasonal variation, that the first half had no special stimulus, or that nothing afresh has gone wrong. Time will tell whether this assumption is correct, for it must be admitted that it is difficult to pick out consuming lines that would naturally have an increase in activity, and as to general business improving, or recovering to any extent from its depression, a month or two is entirely too short a time in which to expect that.

The half year, as a matter of fact, has not been a particularly poor one in point of steel tonnage, which perhaps makes it more difficult to expect much improvement later on. In last report the half-year's production of all steel ingots was estimated at 23,900,000 tons, while with the official report for June now available the total is found to be fully 24,000,000 tons, which makes it 18 per cent under the first half of last year, 4 per cent under 1928, approximately equal to 1927 and 1926, and above the first half of all preceding years.

Steel prices do not make so favorable a comparison. They have been declining in general and in the past week bars, shapes and plates have become quotably lower, while some prices are not well held, figures commonly called "the market" being shaded in various instances. Taking commonly quoted prices and averaging representative commodities, there is about $5.40 per ton decline from the high point of last year to the present time while prices are nearly $3 a ton below the low point of late 1927, until recently the low point since 1922. Moreover there was a quick though small rebound after the low point of 1927 was struck, whereas now prices show no resiliency whatever.

Valley pig iron has yielded to the pressure of declines in other districts and is off 50 cents a ton, from prices that had held since the advance of May, 1929. Bessemer is now quotable at $18.50 and basic and foundry at $18, f.o.b. valley furnaces. Pig iron prices make a better showing than steel prices, however, the general average of all important districts being still a trifle above the low of two years ago.

While mills are still holding 1.75 cents on bars and 1.70 cents on plates and shapes as the regular market, only small lots are going at these figures and it is admitted that 1.65 cents is not infrequently done on all three when any fairly desirable business is to be secured. These are Pittsburgh prices, while in the East sales are made at delivered prices which figure back to a lower Pittsburgh basis.

No additional line pipe buying of consequence is reported. Producers are well filled for several months, say three or four, the time being indefinite as capacity of new units cannot be known closely. Thus it would be difficult to negotiate new orders as exact deliveries could not be promised. There are many projects and producers are convinced that much line pipe laying will have to go over to next year on account of deliveries.

Structural fabricating shops continue to run at high rates and are well booked, while new business is coming in as freely as formerly. The automobile industry has slowed down to a very low rate for July and August and merely has chances of better things in September.

WESTERN NATURAL GAS COMPANY LIKELY TO GET OMAHA CONTRACT

OMAHA, Neb., July 14.—The Western Natural Gas Co., owned by interests represented by Thomas R. Weymouth, has just submitted a new bid for furnishing natural gas to the City of Omaha and from indications this company will be given a contract under these new terms. This is the third bid the Western company has made to Omaha in the past six months.

The bid of the Western company is something like $4,500,000 less than the bid submitted by that company some weeks ago, the saving being due to changes in the specifications under which the installation will be done.

The Cities Service Co. and the Missouri Valley Pipe Line Co. refused to make bids under the specifications, claiming these plans gave Omaha preference over all other customers.

"The terms look interesting, usable and advantageous," says C. D. Robison, operating engineer for the Omaha metropolitan district. "I believe the rates offered are competitive with coal."

The Western Natural Gas Co. submitted two schedules, either one of which the district is free to select. These bids are, per 1,000 feet:

	Schedule 1	Schedule 2
Up to 50,000 ft. per month	$0.43	$0.41
Over 50,000 and up to 3,000,000 ft.	.23	.25
Over 3,000,000 but not exceeding 200,000,000 ft.	.18	.19
Over 200,000,000 ft.	.16	.16
Unaccounted for gas	.18	.18

A. R. Mullergren, of Kansas City, consulting engineer for the Western company, computes the relative costs for cooking and water heating in 12 months for the average home owner in Omaha as compared to Denver and Kansas City would be as follows:

Western company's possible rate to Omaha users	$30.60
Denver rate, corrected for elevation	45.42
Kansas City	42.00

Omaha is now manufacturing gas with a heat content of 550 B.t.u. at an average cost of 35 cents per 1,000 feet, while the natural gas offered by the Western company at an average cost to the district of 24 to 26 cents has a heat content of 1,000 B.t.u.'s.

The dollars and cents comparison of income to the gas line companies in the 20-year period are as follows:

Western Natural Gas Co., present bid	$96,500,000
Missouri Valley company, previous bid	102,500,000
Missouri-Kansas, previous bid	105,000,000
Skelly, 1928 bid	101,000,000

It is generally believed in Omaha that this bid of the Western will be accepted and submitted to a vote this fall.

PLATTE VALLEY LINE

CASPER, Wyo., June 12.—At a meeting in Mitchell, Nebr., attended by men from Wyoming and Nebraska towns in the Platte Valley, representatives of the Public Service Corp. of Nebraska, Thomas Cook and R. E. Underwood of Amarillo, Tex., asked that franchises for natural gas systems be given to their company which proposes to lay an 18-inch pipe line from the Texas Panhandle to Bridgeport, Nebr., a distance of 422 miles. A lateral would be laid from the line to Guernsey, Torrington and Wheatland. The company would supply natural gas to 54 towns and cities along the line. The cost of such a line is estimated at $15,000,000. Several of the towns have authorized special elections to grant franchises, including Torrington.

SOUTHERN CALIFORNIA PLANS

LOS ANGELES, Calif., July 12.—Don C. Murphy, of the construction department of the Southern California Gas Co., announcing the remainder of the construction program for 1930, said:

"For the remainder of the year 1930, the program of pipe line construction includes an even greater expenditure than that of 1929. This program contemplates the installation of additional pipe line facilities to increase the capacity of the Midway line system by 40,000,000 feet from Taft and Kettleman Hills to the Los Angeles metropolitan area. To provide this additional capacity, the installations of the following pipe lines are contemplated: 7½ miles of 22-inch pipe from the Buena Vista Junction at Taft, which is the south end of the 20-inch Kettleman line, to Station 40 at Taft, which will bring the Kettleman Hills gas to the compressor station at Taft; 40 miles of 22-inch pipe from mile 32 to mile 72, which will add the last link in a second line from Taft to Los Angeles, paralleling the present line along the Ridge Route; 17 miles of 22-inch pipe from Newhall station to Ventura Boulevard and Sepulveda Boulevard, and 10 miles of 26-inch pipe from the last named point to the Santa Monica terminal at Pico Boulevard, and Sepulveda Boulevard via Sepulveda Canyon. In addition to these lines, 5 miles of 16-inch line from the outlet of the Ventura compressor station through Hall Canyon to Mills Road Junction is contemplated."

TO RUN OIL NEXT WEEK THROUGH PURE-VAN LINE

FORT WORTH, Tex., July 14.—The next week should see oil running through the Pure-Van Pipe Line Co.'s 10-inch line from the Van Pool to Smiths Bluff, for the line is fully completed and is only waiting on the completion of three pumping stations, which are almost finished and ready for service. This is the only line running from the Van Field, and will have a capacity of around 40,000 bbls. per day when the six stations on the line are completed.

The field will probably take its place under some form of proration and be restrained in production and pipe line runs in accordance with a blanket proration plan covering the State of Texas and all of its producing areas. The Van Field, to date is not being prorated except by the companies which hold the acreage, allotting only 25,000 bbls. per day since its discovery, the majority of it going to steel storage erected on the Pure Oil Co.'s tank farm west of the pool.

TEXAS GAS UTILITIES PIPE LINE COMPLETED

Announcement of the completion of the new high-pressure natural gas pipe line of Texas Gas Utilities Co., subsidiary of Appalachian Gas Corp., is made by Ross Holmes, chief engineer of the company, and deliveries of gas to the electric generating station of Central Power & Light Co., located on Devil's River, Texas, commenced immediately. Work on the new line was started early in May.

The new line, completion of which marks the final stage of the company's initial pipe line construction project, extends from the Eagle Pass gas field of Texas, to Devil's River, and is unique in several respects, including the use for the first time of steep pipe in 60-foot sections, resulting in a considerable reduction in welding costs. Upwards of 10,000,000 pounds of steel pipe were used, supplied by A. O. Smith Corp. of Milwaukee, Wis., and delivered in 212 carloads making up eight special trains.

For the first 47 miles the line is absolutely straight, a favorable condition resulting in minimum friction losses. There are but two gentle curves in the remainder of the line. The pipe was welded by the electric arc process, and for most of the distance is laid about 2 feet underground. In some places, when crossing hills, the pipe is as much as 18 feet below the surface.

Through the new line Texas Gas Utilities Co., besides supplying on long-term contract the entire fuel requirements of Central Power & Light Co., will also serve natural gas for industrial and domestic purposes in Del Rio and other communities in Maverick, Kinney and Val Verde Counties. The line traverses the new $6,000,000 Maverick County irrigation project, which, when completed, will open up additional markets for natural gas for use as fuel for irrigation pumps.

LINES TO HOBBS DISTRICT ARE NOW RUNNING OIL

FORT WORTH, Tex., July 14.—The Shell Pipe Line Co. which has just completed a line from Hobbs, N. Mex., to a point on the Texas Pipe Line Co.'s line between Jal and Hobbs, started running oil on July 9. The 6-inch line of The Texas Company, into which the Shell line connects, has been running 6,000 bbls. daily from the Lea Pool and the Texas Pacific Coal & Oil Co.'s property, and other connections. The Texas Company's line from Jal to Winkler County, Texas, is a 10-inch.

The Atlantic Pipe Line Co.'s 8-inch line from Hobbs, N. Mex., to Midland, Tex., started running oil on July 8. The Atlantic's gathering system is connected to the Amerada Petroleum Corp.'s leases, Midwest's leases, Prairie Oil & Gas Co.'s leases and to Walker's leases and Tidal Oil Co.'s No. 1 Grimes, the largest well of the Hobbs area, to date.

Total pipe line outlet of the Hobbs Field is now around 40,000 bbls. per day, with rumors of other lines to be built by companies which have production in West Texas and Lea County, New Mexico.

The Atlantic Pipe Line Co. ran a total of 59,600 bbls. to storage in its Hobbs tank farm during the past 30 days, and the Humble Pipe Line Co. transferred 337,880 bbls. from Hobbs by way of Winkler and McCamey to the Gulf.

TABER GAS MAINS

CHATHAM, Ontario, July 12.—Canadian Western Natural Gas Co. of Calgary has commenced the laying of mains in the residential section of Taber, Alberta.

Plug Back Test North of Penn Pool

Sunray-Llano Companies' Well Gets Sulphur Water and Will Be Small Producer. Big Lake Well, Deepened, Increases Production. Irion County Abandonment

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 14.—Sunray Oil Co. and Llano Oil Co.'s No. 1 Jones, in Section 6, Block 44, one-half mile north of production in the Penn Pool, Ector County, at first had the appearance of making an extension to the pool early in the week, but deeper drilling exposed sulphur water at 3,821-23 feet, and the companies are plugging back to 3,750-52 feet where the oil was encountered. It made one 20-minute head flowing 45 bbls. in that time, then stopped flowing, and drilling was resumed in an effort to increase the production, but failed and went into sulphur water. It will no doubt make a small well, but due to the fact that the water is so near shooting will now be rather hazardous. This test will undoubtedly settle all drilling in this area to the north of the pool, for Independent Oil & Gas Co. and Tidal Oil Co.'s No. 1 Eidson, three-quarters of a mile to the west, is a dry hole at 3,280 feet, and other companies owning offset acreage will be rather dubious as to the chances for commercial production in the N half of Section 6.

The Humble Oil & Refining Co. has made a location in the SW cor., Section 6, Block 44, T.&P. Survey, in the Penn Pool, a diagonal offset to Gulf Production Co.'s No. 2 Connell, and to The Texas Company and Cosden Oil Co.'s No. 8 Connell. These locations are on the northwest edge of the pool, and will be an interesting set of tests in this direction. They are one-half mile due north of production.

Andrews County Tests

Penn, Humble Oil & Refining Co. and Atlantic Oil Producing Co.'s No. 1 Wilson, in Section 20, Block A-37, Andrews County, which had a showing of oil last week at 3,085 feet, and filled part of the hole with fluid, is now drilling at 3,835 feet with no further showings. Some 250,000 feet of gas was picked up with the oil showing at 3,085 feet.

Deep Rock Oil Co. and others' No. 1 King, in Section 11, Block A-46, Andrews County, is in about the same condition as last week. The tubing has been rerun three times with no results. No. 1 Mathis, belonging to the same partnership, located in Section 4, is drilling below 5,075 feet, and No. 1 Miles, in Section 22, is sidetracking a lost bit at 4,630 feet.

Big Lake Wells

Big Lake Oil Co.'s No. 2-C University, in the Big Lake Pool, Reagan County, has been deepened from 8,242 feet to 8,603 feet and production increased to 1,150 bbls. per day. Continental Oil Co.'s (Texon Oil & Land Co.) No. 2-B University, in the same pool, which is increasing in production gradually, as did its predecessor and the deep discovery well of the pool, No. 1-B of the same company, reached a new peak this week when it flowed 2,019 bbls. in 24 hours.

Southern Crude Oil Purchasing Co.'s No. 2 Eaton, in the Pecos Valley Field, Pecos County, in Section 35, Block 3, H. &T.C. Survey, has been shut in for pipe line connections after flowing 130 bbls. in 24 hours upon being shot with 25 quarts from 1,578-95 feet, total depth being 1,602 feet. One small line serves this field, leading to a loading rack on the Santa Fe and the production shipped out via tank car.

One interesting test in Midland County, Pure Oil Co.'s No. 1 Hutt, in Section 14, Block 38, Township 4s, T.&P. Survey, was abandoned this week at a total depth of 4,227 feet, thereby excluding considerable acreage to possibilities of production in this county.

Tom Green and Irion Counties have been getting quite an extensive lease play for the past few months, one of the latest large deals being closed on approximately 11,500 acres by the Humble Oil & Refining Co. in the southwest part of the former named county, practically all of the land lying under the J. B. Russell ranch. This makes the third block taken by this company in the two counties.

Pipe Line Runs

West Texas production decreased during the past week while pipe line runs increased, showing a total of pipe line runs of 273,545 bbls. on June 25, and 305,569 bbls. on July 2. Runs to West Texas refineries were 42,642 bbls. on June 25, and 28,812 bbls. on July 2. Tank car shipments were 23,801 bbls. on June 25, and 24,283 bbls. on July 2. Total daily distribution on June 25 was 339,988 bbls. while on July 2 was 358,664 bbls. Total production on the former period was 329,719 bbls. and for the latter period was 333,423 bbls. The difference between production and distribution on June 25 was 10,269 bbls., and on July 2 was 25,241 bbls. Total daily production included Lea County, New Mexico.

Taylor County Wells

Total production of the Dunnigan and Shell Petroleum Corp.'s No. 1 French, in Taylor County, to June 8 was 8,924 bbls. in storage. Adams-Ferguson and Hobbs' No. 1 Lowe, to the south of this well in the Guadalupe County School Lands Survey, has produced 6,850 bbls. Gibson's No. 1 Cody had produced 1,800 bbls. and Mid-Continent Exploration Co.'s No. 1 Lindsey has produced 1,400 bbls. This makes a total of 18,974 bbls. for this area. The Dunnigan well is pumping an average of 70 bbls. per day and the other three wells have produced as high as 220 bbls. per day, but are now only producing 100 bbls. daily.

Irion County Abandonment

Kingwood Oil Co.'s No. 1 Suggs, in Section 19, Block 1, H.&T.C. Survey, Irion County, which had several good oil and gas showings during its period of drilling and testing, has now been abandoned. Total depth of the well is 7,818 feet. A 100-quart shot was given it from 3,360-3,403 feet, but with no results. The best showing of oil was found at this depth and it was believed it might make a small commercial producer if shot in this pay. Other shots were given the well, below this depth, but none of them had the desired effect.

WEST TEXAS PRODUCTION
Week ending July 12

County—	Wells	Bbls.
Andrews	1	98
Crane	342	32,539
Crockett	48	1,886
Ector	53	20,960
Fisher	7	965
Garza	5	49
Howard-Glasscock	513	30,140
Irion	3	245
Jones	73	1,326
Loving	23	1,845
Mitchell	146	2,320
Pecos	473	115,270
Reagan	259	18,245
Runnels	3	14
Scurry	5	12
Taylor	2	142
Upton	248	6,510
Ward	25	2,240
Winkler	596	69,785
Total this week		304,591
Total last week		306,868
Difference		2,277

COMPLETIONS IN WEST TEXAS
Week ending July 12

Crane County

Church & Fields' No. 2 University (Collett), top of pay 3,006 feet; shot 310 quarts 3,005-3,124 feet; initial production 300 bbls.; total depth 3,122 feet. Gulf Production Co.'s No. 76 McElroy, top of pay 2,772 feet; initial production 270 bbls.; total depth 2,960 feet.

Ector County

Gulf Production Co.'s No. 1-B Connell, top of pay 3,468 feet; initial production 345 bbls.; total depth 3,700 feet. Same company's No. 3 University, top of pay 3,542 feet; initial production 585 bbls.; total depth 3,700 feet. Same company's No. 3-A University, top of pay 3,540 feet; initial production 587 bbls.; total depth 3,700 feet; shot 320 quarts 3,550-3,670 feet.

Amerada Petroleum Corp.'s No. 1-B University, top of pay 3,630 feet, increased to 3,665 feet; initial production 542 bbls.; total depth 3,694 feet. Cosden Oil & Refining Co.'s No. 4-B University, top of pay 3,540 feet; shot 120 quarts 3,592-3,676 feet; initial production 375 bbls. in 13 hours; total depth 3,675 feet. Landreth Production Co.'s No. 4-S University, top of pay 3,577 feet; increased to 3,635-50 feet; shot 140 quarts 3,572-3,662 feet; initial production after shot 792 bbls., before shot 415 bbls.; total depth 3,694 feet. Skelly Oil Co. and others' No. 1-A University, top of pay 3,625 feet; shot 360 quarts 3,624-3,718 feet; initial production 620 bbls. nov flowing 400 bbls.; total depth 3,737 feet, was formerly completed at 3,722 feet. Skelly Oil Co. and others' No. 1-C University, recompleted, top of pay 3,640 feet; increased to 3,650-65 feet; initial production 660 bbls. in 19 hours; total depth 3,706 feet, was formerly completed for 70 bbls. Transcontinental Oil Co.'s No. 1 University, top of pay 3,589 feet; increased to 3,656 feet; shot 250 quarts 3,589-3,690 feet; flowed 540 bbls. first 24 hours, after shot flowed 125 bbls. next 12 hours then went dead; initial production 135 bbls. in 14 hours, pumping; total depth 3,700 feet.

Glasscock County

F. H. E. Oil Co.'s No. 1 Sprinkler, dry and abandoned; total depth 2,622 feet. Kirby Petroleum Co. and others' No. 2 Phillips, top of pay 2,137 feet; initial production 1,208 bbls.; total depth 2,292 feet. Simms Oil Co.'s No. 5 Coffee, top of pay 2,253 feet; initial production 375 bbls. in 12 hours; total depth 2,290 feet. California Oil Co.'s No. 1 Jones, dry and abandoned; total depth 3,440 feet.

Howard County

Howard Oil Corp.'s No. 1 Kloh and others, top of pay 2,381-2,414 feet; initial production 240 bbls. and 88 bbls. of water; total depth 2,566 feet. Merrick & Lamb's No. 14 Clay, top of pay 1,800-21 feet; increased to 1,866-72 feet; shot 40 and 15 quarts; initial production 40 bbls.; total depth 1,904 feet.

Pecos County

The Texas Company and others' No. 1 Wright estate, dry and abandoned 3,504 feet. Fisher & Lowerie's No. 1 Webb, dry and abandoned; total depth 3,256 feet.

Runs Through Trunk Lines

Company, size, location—	Bbls.
Atlantic, 10-inch, Houston	29,550
Gulf, 10-inch, Ranger	43,698
Humble, 2-8-inch, San Angelo	34,782
Humble, 10 and 12-inch, Station "A"	54,327
Illinois, 2-8-inch, Del Rio	25,192
Magnolia, 8-inch, De Leon	14,621
Pasotex, 8-inch, El Paso	12,321
Shell, 10-inch, Healdton	39,096
Shell, 10-inch, Houston	31,323
Texas, 12-inch, Houston	20,713
Total	305,623

Runs to West Texas Refineries

Amarillo Ref. Co., Pyote	1,165
Big Spring Ref. Co., Big Spring	1,462
Burford Ref. Co., Pecos	5,603
Bluebonnet Ref. Co., Wickett	None
Cosden Ref. Co., Big Spring	1,553
Col-Tex Ref. Co., Colorado	6,500
Great Western Ref. Co., Big Spring	2,786
Humble Oil & Ref. Co., McCamey	8,565
Mid-Tex Ref. Co., Midland	None
Richardson Ref. Co., Big Spring	None
Tonkawa Ref. Co., Pyote	1,038
Wickett Ref. Co., Wickett	140
Total	28,812

Tank Car Shipments

Fox & Thorsen from Mertzon	247
Thomas & Brann from Grant City	150
Orient from Hurdle	90
Southern Crude from Wickett	23,796
Total	24,283
Total daily average distribution	358,718
Total daily average production (including Lea County, N. Mex.)	333,423
Daily average from storage	25,292

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended July 14

ANDREWS COUNTY

Company, well, farm, name, section and block—	Remarks—
Deep Rock Oil Co. et al's No. 1 Mathis, 900 ft. from S and W, Sec. 4, Blk. A-46, Public School Land	Est. 1,500,000 ft. gas; ¾ bbl. oil per hour; show gas 4,166 ft.; show oil 4,185 ft.; increase at 4,281 ft. and 4,351 ft.; sulphur water 4,719-26 ft. and increase at 4,780 ft.; drlg. 5,075 ft.; making 8 bbls. oil and 20 bbls. water per day.
Deep Rock Oil Co.'s No. 1 Miles, 990 ft. S, 1,650 ft. E of NW cor., Sec. 22, Blk. A-46, School Land	Show oil 4,240 ft. and 4,270 ft.; hole full water at 4,570-76 ft.; fishing bit 4,630 ft.
Fuhrman Pet. Corp.'s No. 1 Ford, 440 ft. from S and 2,200 ft. from W of Sec. 16, Blk. A-43, Public School Land	Drlg. 4,007 ft.; show gas 3,990-94 ft.; increase at 4,001-02 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E, Sec. 11, Blk. A-46	Top pay 4,335 ft.; swabbed 476 bbls.; total depth 4,454 ft.; 3,500 ft. oil in hole; now agitating; swabbing 60 bbls. daily; pulled tubing; no production.
Maer & Staniforth's No. 1 Meador, C SW Sec. 8, Blk. A-41	Drlg. 150 ft.
R. R. Penn's No. 1 Wilson, C, Sec. 20, Blk. A-37, School Blk.	500 ft. oil in hole; show oil and gas at 3,085 ft.; drlg. 3,835 ft.; oil and gas show at 3,085 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 Fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
E. L. Chapman's No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,250 ft.; hole full water 1,135-85 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F.R.R. Sur.	Show oil 1,830 ft.; shut down 2,345 ft.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,750 ft.

(Continued on Page 122)

$1,838 saved in fuel and oil costs

Benefits of Correct Lubrication (Gargoyle Lubricants and Vacuum Oil Company Methods)

1. Reduced friction
2. Reduced power consumption
3. Improved continuity of production
4. Reduced maintenance costs
5. Prolonged useful life of machinery
6. Reduced ultimate cost of lubricants and labor of applying them
7. Reduced total production costs.

FILE NO. 111827

FROM
VACUUM OIL COMPANY
FILE NO. 111827

A plant in the middle west operates two Diesel engines, one of 300-h.p. and the other of 360-h.p.

Unsatisfactory lubrication necessitated frequent shut-downs and repairs; on opening up there were always dry spots on the cylinder walls. Difficulty was experienced in turning the engines over by hand-bar at starting.

The Vacuum Oil Company was called in. Our engineer, in addition to lubrication deficiencies noted that exhaust-gas temperatures were excessive for the load carried and traced the cause to high back-pressure in the exhaust line.

As a result of the engineering service rendered and the use of Gargoyle D.T.E. Oil Extra Heavy the following improvements in operation were secured.

Fuel oil consumption reduced 20%.

Shut-downs from lubrication troubles entirely eliminated.

The engine turned over easily by hand-bar at starting.

Complete absence of dry spots on cylinder walls, hence less wear.

Back-pressure and exhaust-gas temperature normal.

Lubricating oil consumption reduced 40%.

On request we will send you, without obligation, one or all of these authoritative treatises on lubrication. You will find them useful in obtaining the maximum of lubrication efficiency in your plant.

WHEN such savings as the above are directly attributed to correct lubrication, the *initial cost* of the lubricants is of little or no importance.

Quality lubricants such as those manufactured by the Vacuum Oil Company have an enviable record for helping to make such savings.

One of our lubrication experts will be glad to call on you and tell you what we can do for you along similar lines.

GARGOYLE

Lubricating Oils

The world's quality oils for plant lubrication

Vacuum Oil Company

HEADQUARTERS: 61 BROADWAY, NEW YORK

BRANCHES AND DISTRIBUTING WAREHOUSES THROUGHOUT THE WORLD

Panhandle District Continues Decline

Flush Production in Gray and Hutchinson Counties Leads Drop. Riggs Pool Again Prorated. Pool Extended Slightly

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 14.—The Panhandle district continues to show a decline in production, with the flush production areas of Gray and Hutchinson Counties leading in the drop. Last week there was a decrease of 3,195 bbls. and this week a drop of 2,576 bbls. was registered, which aided considerably towards stabilizing this area, and giving some relief to the crowded tank and pipe line conditions.

Empire Gas & Fuel Co.'s No. 1 Fields in Section 13, Block 7, I.&G.N., west of White Deer in Carson County, and in the same section as the discovery well of this pool, the first one found south of the granite ridge in the Panhandle district, was completed this week as a 200-bbl. well at a total depth of 3,350 feet, although it was plugged back to 3,270 feet before going on production. Top of the pay of this well is 3,242-63 feet. This is the second oil producer of this pool, one other test being completed as a gasser by the Cockrell-McIlroy Oil Co. in Section 11.

Riggs Prorated

The Riggs Pool, the phenomenal shallow pool of Young County, near the town of New Castle, was prorated this week for the third time, being cut to 1,345 bbls. per day while the pool has a daily potential of around 17,000 bbls. The Prairie Pipe Line Co. is taking the high gravity sweet oil, and has elected to take that amount for the coming 30-day period, and all leases were prorated accordingly. Gauges were taken on the different leases with the following showings made: H-Y Oil Co., daily potential of 480 bbls., Remington lease 724 bbls.; E. R. Riggs, 4,016 bbls.; Panhandle Refining Co., 408 bbls.; Westheimer & Daube, 1,988 bbls.; King Royalty Co., 576 bbls.; Independent Oil & Gas Co., 3,572 bbls.; Kleiner and Riggs, 812 bbls.; Brazelton and others, 1,316 bbls. Three shut-in wells were not gauged. Gravity of the oil in this pool is 41.

Graham Pool

Greene Oil & Refining Co.'s No. 1 Morgan, 1,280 feet from north and 1,320 feet from west of T.E.&L. Survey No. 3,413, about 2½ miles northwest of the Nash and Windfohr deep producer in the Graham Pool, Young County, is shut down at 3,856 feet where 6⅝-inch casing has been underreamed to set at 3,850 feet. It is flowing about 75 bbls. per day, by heads, and will probably make a better showing when the hole is cleaned out and the casing set. This paves the way for more drilling and production in this direction from the Graham Pool, especially in this deeper pay horizon, which failed to produce in other offset wells as it did in the Nash and Windfohr well. The Caddo lime was topped at 3,855-56 feet.

Nash and Windfohr's No. 1 Graham about 10 miles south of New Castle in Allen Hine Survey, Abstract No. 135, a wildcat, is underreaming 8¼-inch casing at 2,460 feet, total depth of hole being 2,678 feet. It is bailing an estimated 2 bbls. of oil per hour, from sand found at 2,677-78 feet, looking as if it was sure to make a small commercial producer and opening up a new pool for this county which is dotted with both shallow and deep pools.

T. B. Slick's No. 1 Graham in the Graham Pool, and an offset to Nash and Windfohr's No. 1 McCloud, is shut down at 3,840 feet cleaning out and swabbing 50 bbls. of oil per day after a 90-quart shot from 3,775-3,815 feet. No. 1 McCloud came in with an initial of 1,000 bbls. per hour, the best well in Young County.

The United Producers Co. extended the shallow Riggs Pool, Young County, 1,800 feet west this week when it completed No. 1 Larimore for a 100-bbl. well from sand found at 690-707 feet. No pipe line connection was given the well and it was shut in until it was obtained.

The Texas Pipe Line Co. has connected with the shallow Albany Townsite Pool in Shackelford County and will deliver the oil to the Oriental Oil Co.'s refinery at Dallas. This crude is high gravity and sweet, and is found around 700 feet.

Mid-Tex Oil & Gas Co.'s No. 1 Windham in the G. W. Denton Survey No. 1,370, in the southwest part of Callahan County, is shut down checking depth of the hole which is believed to be 4,450 feet. The hole filled with fluid in five hours after swabbing dry, the oil coming from pay found at 4,349-53 feet. It hardly looks like a profitable producer at this stage, and will probably be plugged unless a shot or deepening has good results.

Production of the Overall Pool, Coleman County, was 561 bbls. during the week.

RANGER DISTRICT COMPLETIONS
Week Ending July 12

Callahan County

Production Purchasing Co. of Texas and Campbell Oil Corp.'s No. 1 Horn dry and abandoned; total depth 1,271 feet. Star Drilling Co.'s No. 1-B Finley, dry and abandoned; total depth 900 feet. Beams and others' No. 1-D Jackson, oil sand 1,198 feet; initial production 20 bbls.; total depth 1,202 feet.

Coleman County

Vacuum Oil Co. and others' No. 7 Weaver, total depth 1,901 feet; plugged back to 1,848 feet; shot with 5 quarts at 1,842-46 feet, and 10 quarts from 1,837-46 feet; initial production 10 bbls. Homaokla Oil Co.'s No. 2 Hutchings, dry and abandoned; total depth 3,087 feet.

Eastland County

W. N. Gibson's No. 1 Mitchell, abandoned location. Teatsorth and others' No. 4 Harbin, oil sand 1,538 feet; shot with 20 quarts from 1,538-48 feet; initial production 5 bbls.; total depth 1,550 feet.

McCulloch County

Brady Water Works' No. 2 City of Brady, dry and abandoned; total depth 2,112 feet.

Palo Pinto County

Root & Rhodes' No. 1 Costello, top of pay 1,355-68 feet; initial production 5 bbls.; total depth 1,375 feet.

Shackelford County

Cleveland Production Co.'s No. 1 Hastings, dry and abandoned; total depth 2,064 feet. Mitchem and others' No. 1 Nail, dry and abandoned; total depth 1,464 feet; 2,000,000 feet of gas at 1,326-62 feet.

Stephens County

Texas Consolidated Oil Co.'s No. 1 Walker, top of pay 4,010 feet; shot with 200 quarts from 4,010-90 feet; initial production 75 bbls. of oil and 900,000 feet of gas; total depth 4,100 feet. F. S. Freeland's No. 1 Wogley, abandoned location. Lone Star Gas Co.'s No. 5 Henry, initial production 6,000,000 feet of gas 2,080-2,104 feet.

Throckmorton County

Brihill and others' No. 1 Richards, dry and abandoned; total depth 1,010 feet.

COMPLETIONS IN PANHANDLE DISTRICT
Week Ending July 12

Carson County

British American Oil Co.'s No. 1 Block, top of pay 2,973 feet; initial production 150 bbls.; total depth 3,035 feet. Danciger Oil & Refining Co.'s No. 2 Byrum, top of pay 3,150 feet; initial production 3,150 bbls.; total depth 3,192 feet. Empire Gas & Fuel Co.'s No. 24 Burnett, 34,500,000 feet of gas 2,280-2,330 feet; total depth 2,527 feet. Empire Gas & Fuel Co.'s No. 2 Fields, total depth 3,350 feet; plugged back to 3,270 feet; top of pay 3,246-63 feet; initial production 200 bbls. Osborne and others' No. 3-A Percival, top of pay 3,247-65 feet; initial production 260 bbls.; total depth 3,320 feet. Washoma Oil & Refining Co. and Shell Petroleum Corp.'s No. 1 Percival, top of pay 3,214-75 feet; initial production 296 bbls., with 2,000,000 feet of gas; total depth 3,292 feet.

Gray County

Lyon and others' No. 2 Morse, show oil 2,588 feet; top of pay 2,618-2,705 feet; shot with 310 quarts from 2,618-2,730 feet; initial production 150 bbls.; total depth 2,730 feet. Shamrock Oil & Gas Co.'s No. 3-C Chapman, top of pay 2,823 feet; initial production 410 bbls.; total depth 2,832 feet. Boldridge & Lilley's No. 1 Melton, top of pay 3,133 feet; initial production 25 bbls.; total depth 3,143 feet. Empire Gas & Fuel Co.'s No. 2 Wall, initial production 47,000,000 feet of gas from 2,454-93 feet; total depth 2,610 feet. Humble Oil & Refining Co.'s No. 1 Young, initial production 20,000,000 feet of gas from 2,605-2,755 feet; total depth 2,840 feet. McIlroy Oil Co.'s No. 2 Archer, top of pay 3,200 feet; shot with 180 quarts from 3,190-3,230 feet; initial production 275 bbls.; total depth 3,230 feet. Mid-Continent Petroleum Corp.'s No. 2 Laugham, top of pay 2,682 feet; initial production 1,350 bbls. with 3,000,000 feet of gas; total depth 2,683 feet.

Hutchinson County

Holmes Brothers' No. 1 Moore, top of pay 2,985 feet; initial production 100 bbls.; total depth 3,115 feet.

Moore County

Fritch Oil & Gas Co.'s No. 1 Lee Bivins, 30,000,000 feet of gas from 2,400-10 feet and 50,000,000 feet of gas from 2,800-65 feet; total depth 3,212 feet.

Potter County

Texas Interstate Pipe Line Co.'s No. 1 Masterson, 47,000,000 feet of gas from 1,745-1,875 feet; total depth 1,875 feet.

Wheeler County

Lone Star Gas Co.'s No. 2 Hicks (Martin) initial production 5,000,000 feet of gas from 1,722-1,910 feet; total depth 1,916 feet. J. A. Murphy's No. 1 Pike, initial production 12,000,000 feet of gas from 1,738-1,890 feet; total depth 1,890 feet.

NORTH TEXAS PRODUCTION
Week Ending July 12

Panhandle district—	Bbls.
Carson County	9,388
Hutchinson County	20,880
Gray County	71,340
Moore County	375
Potter County	6
Wheeler County	600
Total this week	102,588
Total last week	105,185
Decrease	2,599
Wichita Falls district—	
Archer County	18,100
Baylor County	1,350
Clay County	470
Cooke County	3,368
Foard County	188
Jack County	3,255
Haskell County	59
Montague County	6,920
Throckmorton County	980
Wilbarger County	23,585
Wichita County	24,995
Young County	19,517
Total this week	103,057
Total last week	107,712
Decrease	4,655
Ranger district—	
Brown County	6,405
Callahan County	3,395
Coleman County	3,505
Comanche County	375
Palo Pinto County	625
Eastland County	5,360
Shackelford County	5,633
Stephens County	5,664
Total this week	30,961
Total last week	31,961
Decrease	1,000

WICHITA FALLS COMPLETIONS
Week Ending July 12

Archer County

Brown & United Producers Co.'s No. 7 Taylor, dry and abandoned, total depth 1,660 feet. Barnsdall Oil Co.'s No. 1 McCarty, dry and abandoned, total depth 1,502 feet. Bridwell Oil Co.'s No. 4 Falls Co. fee, top of pay 1,132 feet, initial production 10 bbls., total depth 1,148 feet. Same company's No. 6 Falls, top of pay

(Continued on Page 121)

WILDCAT OPERATIONS IN TEXAS PANHANDLE
Week Ending July 14

Company, well, farm, name, section and block—	Remarks—
CARSON COUNTY	
Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 3,024 ft; T.P. 3,021 ft; I.P. 30 bbls. oil.
Empire G. & F. Co.'s No. 1 Archer-B, 330 ft. N and E, SW cor. SW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur.	Location.
Gibson Oil Corp.'s No. 1 Moore, 990 ft. N, 330 ft. E, N½, SE, Sec. 20, Blk. 7, I.&G.N. Sur.	T.D. 2,790 ft; set 6-in. csg.
Reiger & Steckoll's No. 1 Martin, 330 ft. N and W, SW, Sec. 90, Blk. 7, I.&G.N. Sur.	Drlg. 2,225 ft.
Shamrock O. & G. Co.'s No. 1 Thompson, 330 ft. S and W lines, E 80 ac., NE, Sec. 5, Blk. 7, I.&G.N. Sur.	17,000,000 ft. gas 2,755 ft; S.D. 3,404 ft; T.P. 3,171 ft; swbd. 16 bbls. on test.
Suloch Oil Co.'s No. 1 Bost, 990 ft. S, 330 ft. E, SW, Sec. 1, Blk. S.&F.	S.D. 3,065 ft; S.O. 3,005 ft.
Sweeney et al's No. 1 Locke, 164 ft. N and W, 40-ac. tr. along R.R. in Sec. 57, Blk. 7, I.&G.N. Sur.	S.D. 1,000 ft.
Texas Interstate P. L. Co.'s No. 1 Burnett, 1,320 ft. N, 660 ft. W, of W 480 ac., Sec. 99, Blk. 5, I.&G.N. Sur.	S.D. 2,621 ft.
Texas Interstate P. L. Co.'s No. 2 Burnett, C NE, Sec. 77, Blk. 5, I.&G.N. Sur.	Drlg. 525 ft.
CHILDRESS COUNTY	
Continental Oil Co. and Sun Oil Co.'s No. 1 Johnson, 660 ft. NE, Sec. 580, Blk. H, W.&N.W. Sur.	U.R. 8¼-in. csg; T.D. 3,720 ft.
C. L. Sloane et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.
COLLINGSWORTH COUNTY	
Shope Bros.' No. 1 Aldua, 410 ft. N, 330 ft. E, Sec. 96, Blk. 16, H.&G.N.R.R. Sur.	Show oil and gas 1,678 ft.; bailed estimate 10 bbls. first day from G.W. 2,194-98 ft; S.D. 3,000 ft.
Shoupe Bros.' No. 1 Whitson, 330 ft. N and E, SW, Sec. 33, Blk. 12, H.&G.N.R.R. Sur.	Rig.
DONLEY COUNTY	
Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 985 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur.	T.D. 3,006 ft.; contract depth.
Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur.	S.D. 4,025 ft.

(Continued on Page 124)

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SUPPLY CO.

SOUTHWEST TEXAS

(Continued from Page 49)

Comitas grant; rigging up. S. R. C. Co.'s No. 3 "B" F. Cuellar, 150 feet NW line, 150 feet NE line, Block 7, Survey 65; rigging up. S. R. C. Co.'s No. 4 "B" F. Cuellar, 150 feet NE line, 490 feet NW line, Block 7, Survey 65; derrick. S. R. C. Co.'s No. 5 "B" M. Trevino, 150 feet SW line, 150 feet SE line, Block 13, Survey 65; derrick.

Webb County—Cole Pool

South Texas Producing Co.'s (Humble) No. 1 S. Benavides, Myrtle E. Hale Subdivision, Mariano Arispe grant, Block 24; derrick.

DRILLING ACTIVITY

Guadalupe County—Darst Creek

Empire Gas & Fuel Co.'s No. 4 Dowdy, 792 feet N line, 150 feet E line of tract in the J. C. Darst Survey; derrick. Same company's No. 5 Dowdy, 792 feet N line, 150 feet E line of tract in the J. C. Darst Survey; derrick. Gulf Production Co.'s No. 2 Malear, 450 feet SW line, 150 feet NW line, 72-acre tract in the J. R. Robinson Survey; derrick. Same company's No. 5 Posey, 150 feet from S and W lines of tract in the J. R. Robinson Survey; location. Same company's No. 4 Posey, 488 feet SW line, 150 feet SE line of 71-acre tract in the J. R. Robinson Survey; location. Magnolia Petroleum Co.'s No. 3 L. V. Echols, 2,400 feet SW line, 1,100 feet SE line of farm in the James Hodges Survey; location. Trinity Drillers' No. 1 H. G. Goldman, 150 feet NW line, 150 feet SW line of 91-acre tract in the P. B. Alexander Survey; location.

Medina County—Adams Gas Field

Witherspoon Oil Co.'s No. 1 Adams, 300 feet N line, 3,200 feet E line in the P. E. Durst Survey; total depth 1,870 feet; shut down.

Bexas County—Dobrowolski Pool

Penn-Tex Oil Co.'s No. 3 Sandemeyer, 300 feet W of No. 2 in the M. Mencahaca Survey; spudded in.

Duval County—Cole Pool

Henne-Winch's No. 1 R. Benavides, 175 feet SW line, 205 feet SE line, Cole Subdivision, Mariano Arispe grant, Block 4, Survey 22; total depth 2,560 feet; drilling.

Duval County—Kohler Pool

Humble Oil & Refining Co.'s No. 47 Kohler, 1,155 feet E line, 330 feet S line, Survey 172; rigging up. Simms Oil Co.'s No. 9 Dinn, 660 feet E line, 660 feet S line, NW of SE of Survey 143; rigged up; standing. Humble Oil & Refining Co.'s No. 41 Kohler, 2,970 feet S line, 330 feet E line, Survey 165; location.

Schoolfield-O'Byrne—Duval County

C. E. Long and others' (Shell) No. 1 Bishop Duval Land Co., 2,800 feet north line, 160 feet west line, Survey 59, rigging up. Magnolia Petroleum Co.'s No. 1 Lundell, 450 feet north line, 150 feet east line, SE, Survey 60, total depth 4,480 feet, drilling in sticky shale.

Carolina-Texas—Webb County

W. R. Shankle's No. 2 Webster, 1,170 feet west line, 150 feet south line, Survey 684, rigging up.

Cole Pool—Webb County

French Oil Corp.'s No. 1 "B" R. Benavides, 150 feet south line, 150 feet east line, Survey 661, total depth 1,800 feet, drilling. O. W. Killam's No. 19 Bruni, Adams Subdivision, Mariano Arispe grant, Block 1, Survey 8, derrick. O. W. Killam's No. 5 Bruni, 270 feet northwest line, 203 feet southwest line, Adams Subdivision, Mariano Arispe grant, Block 26, Survey 8, total depth 2,701 feet, drilling. Magnolia Petroleum Co.'s No. 3 A. Benavides, 550 feet north line, 150 feet east line, Survey 660, total depth 825 feet, drilling. Magnolia Petroleum Co.'s No. 4 C. Benavides, 150 feet south line, 150 feet west line, Survey 662, total depth 2,350 feet. bailing.

Charco Redondo Pool—Zapata County

C. R. Moore & J. W. Moore's No. 1 Adela G. de Flores, 330 feet northwest line, 330 feet northeast line, E. M. Doty Oil & Gas Subdivision, Block 99, Charco Redondo grant, total depth 150 feet, spudded in, set 10-inch casing 150 feet. C. R. Moore & J. W. Moore's No. 2 Adela G. de Flores, 150 feet northeast line, 150 feet southeast line, E. M. Doty Oil & Gas Subdivision, Block 151, Charco Redondo grant, total depth 50 feet, standing. Mid-West Public Utilities Co.'s No. 1 Garcia, 450 feet southwest line, 450 feet southeast line of M. P. de Garza tract, Block 33, Pedernal grant, total depth 1,381 feet, standing.

Jennings Pool—Zapata County

Alamo Drilling & Leasing Co.'s No. 2 Trevino, 150 feet west line, 150 feet south line, Block 1, Survey 66, total depth 1,238 feet, sand. Same company's No. 3 Trevino, 750 feet east line, 150 feet north line, Block 1, Survey 66, total depth 800 feet, drilling. Edgington & Niles' No. 1 "B" I. G. Trevino, 150 feet southwest line, 150 feet southeast line, Block 4, Survey 65, total depth 1,230 feet, coring. Grimm & Yakey's No. 1 M. Trevino, 510 feet north line, 150 feet west line, Block 5, Survey 412, derrick. Same company's No. 1 C. Bustamente, 150 feet northeast line, 1,300 feet northwest line, Share 33, Fansler Partition, Comitas grant, total depth 200 feet, drilling. Nordan & Morris-Allen & Morris' No. 2 E. Gutierrez, 4,263 feet southeast line, 750 feet northeast line, Share 4, Fansler Partition, Comitas grant, derrick. Nordan & Morris' No. 2 B. M. Trevino, 1,533 feet southwest line, 150 feet northwest line, Block 15, Survey 65, derrick. Nordan & Morris' No. 3 "A" I. G. Trevino, 490 feet northwest line, 150 feet southwest line, Block 6, Survey 65, total depth 1,240 feet, testing sand. Nordan & Morris' No. 4 "A" I. G. Trevino, 450 feet southwest line, 150 feet northwest line, Block 6, Survey 65, total depth 1,234 feet, sand, testing. W. R. Shankle's No. 2 E. Gutierrez, 600 feet northeast line, 2,989 feet northwest line, Share 4, Fansler Partition, Comitas grant, total depth 900 feet, drilling. W. R. Shankle's No. 3 M. Trevino, 150 feet northwest line, 150 feet northeast line, Block 14, Survey 65, derrick. S. R. C. Co.'s (Trinity Drillers) No. 2 Trevino, 490 feet east line, 150 feet north line, Block 8, Survey 66, total depth 1,200 feet, set 6⅝-inch casing. Same company's No. 1 F. Cuellar, 150 feet NW line, 150 feet northeast line, Block 7, Survey 65, derrick.

Jennings-Cuellar—Zapata County

O. W. Killam's (Killam-Duggan) No. 17 "B" Cuellar, 150 feet south line, 150 feet southwest line, Survey 277, location. O. W. Killam's (Killam-Duggan) No. 18 "C" Cuellar, 2,804 feet southeast of northwest corner, 150 feet southwest line, Survey 278, total depth 2,425 feet, drilling. O. W. Killam's No. 20 "B" Cuellar, 1,430 feet south line, 3,340 feet east line, Survey 277, total depth 1,250 feet, drilling. O. W. Killam's No. 21 "C" Cuellar, 847 feet east of northwest corner, 500 feet south of north line, Survey 278, total depth 1,439 feet, drilling. O. W. Killam's No. 24 Cuellar, 2,926 feet northwest line, 150 feet northeast line, Cerrito Blanco grant, total depth 800 feet, drilling. South Texas Production Co.'s No. 1 F. G. Martinez, 2,878 feet north line, 2,498 feet west line, Survey 6, total depth 600 feet, drilling. Same company's No. 9 Measles and others, 3,830 feet southeast line, 660 feet northeast line, Cerrito Blanco grant, total depth 1,753 feet, drilling.

Pettus—Bee County

Barnsdall Oil Co.'s No. 1 Roberts, 300 feet each way out of northwest corner, 225-acre lease in the George A. Kerr Survey, west of Pettus, total depth 3,646 feet, tested 500 feet oil in drill stem, setting casing. Batex Oil Co.'s No. 1 Mrs. H. J. Burns, 360 feet north line, 300 feet east line of north 100 acres of 300-acre farm in the John Pace Survey, total depth 3,635 feet, tested sand 3,631-35 feet, setting 6⅝-inch casing. Cosden Oil Co.'s No. 2 McKinney, 860 feet south line, 300 feet east line of tract in the south John Pace Survey, total depth 3,628 feet, cored oil sand, running casing. Same company's No. 3 McKinney, 360 feet south line, 800 feet east line of tract in the south John Pace Survey, total depth 1,700 feet, drilling sandy shale. Glasscock Brothers' No. 2 Pettus Townsite, center of Block 24, total depth 800 feet, drilling. Grayburg Oil Co.'s No. 1 S. D. Copeland, 150 feet from southeast corner of north half of William Sanford Survey, derrick. Grayburg Oil Co.'s No. 2 Kimball, 150 feet each way from southwest corner of 80-acre tract or 2,700 feet east line, 2,100 feet south line of survey in the Stephen Winship Survey, derrick. George A. Henshaw, Jr.'s No. 1 Beck, 150 feet to north line, 150 feet to west line of Lot 2, Hicks-Hall-Cotton Subdivision in the M. Urango Survey, total depth 3,310 feet, drilling in sandy shale. Houston Oil Co.'s No. 1 Newman, 300 feet from south line, 300 feet west line of 197-acre tract offset to Cosden well in the J. A. Kerr Survey, total depth 3,683 feet, setting casing. Houston Oil Co.'s No. .. Townsite, center of Block 21, derrick. Same company's No. .., Townsite, center of Block 23, location. Same company's No. .. Townsite, center of Block 33, location. Same company's No. .. Townsite, center of Block 35, location.

Humble Oil & Refining Co.'s No. 4 McKinney, 1,100 feet northwest corner, 250 feet northeast line of L. C. Randolph Survey, total depth 2,400 feet, drilling in shale. Same company's No. 5 McKinney, 150 feet south of south line of Pettus Townsite in the G. A. Kerr Survey, total depth 408 feet, set casing. Edward M. Jones' No. 1 Rapp, 990 feet southeast of northwest corner of Section 11 of Ragley Subdivision in the Jose Maria Uranga Survey, total depth 5,100 feet, drilling. Long & Mimms' No. 1 Billingsley, 155 feet to south and west lines of Billingsley 50 acres out of 150-acre tract in the J. Pointevent Survey, rigging up. Nichols Oil Corp.'s No. 4 Hicks, 550 feet east of west line, 430 feet south of north line of Block 20, 930 feet due south of No. 3 Hicks in the Jose Maria Uranga Survey, total depth 3,636 feet, cored sand, small oil show. Osage Oil Co.'s No. 1 Maudlin, 155 feet to north line, 155 feet to east line of east 50 acres of 200-acre tract in the J. Pointevent Survey, total depth 400 feet, setting surface casing. Same company's No. 2 Maudlin, 155 feet north line, 505 feet east line of tract in the J. Pointevent Survey, derrick. Jean Patton's No. 1 Billingsley, 155 feet west line, 2,250 feet south line of Billingsley 30 acres in the B. G. Hadley Survey, derrick. Ed Price's No. 1 Mrs. Laura E. Weiss, 200 feet out of the northwest corner of B. & B. 640-acre survey, in the B. & B. Survey, total depth 4,226 feet, testing. Rio Bravo Oil Co.'s No. 1 S. A. A. P. Railway, 58 feet north of south line, 120 feet west of west line of Block 3, Pettus Townsite in the G. A. Kerr Survey, spudded in. Same company's No. 2 S. A. A. P. Railway, center of the A. Smalley Survey, location. Same company's No. 3 S. A. A. P. Railway in the G. A. Kerr Survey, location.

T. B. Slick's No. 1 B. Hodges, center of Block 37, in the G. A. Kerr Survey, total depth 2,625 feet, drilling in sandy shale. S. R. C. Co.'s No. 1 A. Theis, 2,700 feet from north line, 300 feet west line of 782-acre tract in the R. S. Burns Survey, derrick. S. R. C. Co.'s No. 1 Townsite, center of Block 37, Pettus Townsite, derrick. Southerland and others' No. 1 Billingsley, 155 feet to south line, 155 feet to west line of north 40 acres off north end of 150 acres in the B. G. Hadley Survey, derick. Southern Crude Oil Purchasing Co.'s No. 1 M. Dahl, 887 feet east line, 1,584 feet from north line of Mena Dahl 224-acre tract in the George Pagen Survey, total depth 3,150 feet, drilling in sandy shale. Swift and others' No. 1 Maudlin, 155 feet north and east lines of 10-acre tract out of the Mauldin west 125 acres in the J. Pointevent Survey, derrick. The Texas Company's No. 2 J. R. Scott, 200 feet from north line, 150 feet west line in the J. M. Urango Survey, total depth 620 feet, drilling.

Union Production Co.'s No. 10 George Ray, 150 feet north, 150 feet east of the southwest corner of Block 240, G. Neil Survey, rigging up. Same company's No. 11 George Ray, 3,200 feet southwest of north corner along northwest line, 300 feet southeast at right angles from northwest line in the R. G. Millican Survey, total depth 3,815 feet, plugging to abandon, blew out, 30,000,000 feet gas, hole lost. Same company's No. 13 George Ray, 900 feet due south of Union Production Co.'s No. 1 Ray, gas well in the George Habbermacher Survey, rigging up. Same company's No. 14 George Ray, 600 feet southeast of No. 5 Ray, 250 feet northeast at right angles from south line of survey in the T. Hanson Survey, total depth 2,800 feet, drilling in sand and shale. Same company's No. 15 Ray, 150 feet to south line, 150 feet to east line of southeast corner of Pettus Townsite, offset to Houston Oil Co.'s No. 1 Beasley, rigging up. Same company's No. 16 Ray, 150 feet east of Pettus Townsite, offset to Glasscock's No. 1 in Block 41, spudding in. H. H. Weinert's No. 1 Townsite, center of Block 38, Pettus Townsite, location.

Pettus Area—Goliad County

Doctor Hewitt and others' No. 1 Ray, 200 feet each way out of southwest corner of B.&B. Survey, total depth 4,050 feet, set casing.

CALIFORNIA FIELDS

(Continued from Page 54)

wells during the past few months has greatly stimulated drilling activities in the Potrero Field of Los Angeles Basin with the result that considerable drilling has subsequently got under way. Four more new wells were located during the past week and several additional locations have been spotted. This projected new work is being predicated on the possibility of developing still deeper production in the town lot area as the Richfield Oil Co.'s No. 1 Coffin has shown indications of sufficient importance at 6,258 feet to justify the landing of a string of 9-inch. The zone reecntly discovered by the Sunset Pacific Oil Co. is not holding up as satisfactorily as might be desired and the discovery of a new lower zone will therefore be of primary importance.

Seal Beach

The Continental Oil Co. finished No. 22 Selover, a new well in the Seal Beach Field of Los Angeles Basin during the week and, while this project did not result in an actual flow, it is making 120 bbls. per day on a compressor at 7,950 feet, the hole having been plugged back from 8,004 feet. The Barnsdall Oil Co. has staked location for No. 2 Trust, a new well to be drilled in the Rosecrans Field and construction work is scheduled to get under way shortly. The Barnsdall's first completion on this lease was brought in a few months ago flowing better than 1,000 bbls. per day. On the O'Dea lease, the Barnsdall's No. 6, brought in a short time ago from the Zinns zone at 5,284 feet, is holding up in good shape, current production approximating 410 bbls. daily. The Standard is listing No. 1 Bastanchury as a commercial producer pumping 295 bbls. of relatively clean 32.9 gravity oil per day from 5,851 feet. This new well is located on the extreme end of the West Coyote Field of Los Angeles Basin and its completion consequently extends the proven limits of that field.

The Terra Bella Oil Co. has cleaned out its Tulare County wildcat located in Section 35-22-27 and, while it is pumping 25 bbls. per day, the output is cutting about 50 per cent water. This well has resulted in considerable activity in the immediate area with the result that approximately 10 locations have already been staked. The Western Oil & Exploration Co. is rigging up No. 1 Gardner, a new well located approximately 600 feet north of the Terra Bella's discovery well and will spud in some time within the next 10 days. The production developed by the Terra Bella Oil Co. was encountered at 918 feet with the result that the potentiality of this area should be determined in the very near future. The Shell Oil Corp. is contemplating the advisability of recementing its No. 1 Porter Day, a wildcat located in the Weed Patch area of Kern County, due to an unsatisfactory production test concluded a few days ago. If this procedure is followed out it will probably be another 10 days before the potentiality of this promising wildcat is definitely determined.

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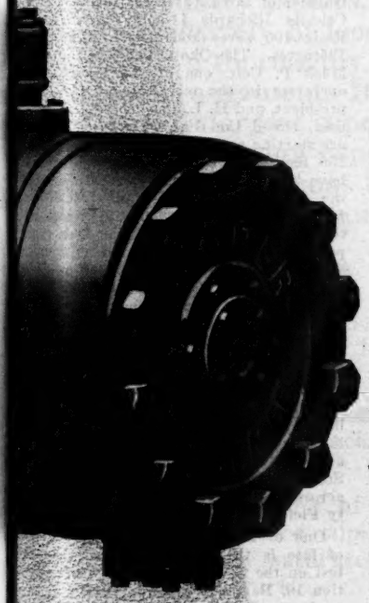

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Few Completions in the Central West

Unusual Producer Found in Old Lima Field Making 100 Bbls. Initial. Allen County Well Good for 50 Bbls.

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, July 14.—A few completions were found during the week in the various divisions of the Central West Field, with the central Ohio division in the lead. An unusual sized producer was found in the old Lima Field of northwestern Ohio. The new well was drilled by R. W. Kirk and others, 1,000 feet from the south line and 210 feet from the east line of the E. H. James farm, on the old oil map as the Harriett Hays, in the N quarter, Section 34, Biglick Township, Hancock County. It is the second test on the lease and produced 100 bbls. initial. Trenton was topped at 1,377 feet and drilled 126 feet into the formation. This well will bring about deeper drilling in the Trenton than has usually been the case outside of some areas around Tiffin and Cygnet. In Portage Township, same county, Mathias Brothers' No. 14 well, 450 feet from the north line and 750 feet from the west line of the Isaac Hart farm, Section 27, pumped 25 bbls. initial from a total depth of 1,542 feet or 225 feet in the Trenton lime.

Northeast of Lima, in Bath Township, Allen County, Roalman & Peak's No. 3 well, 250 feet from the south line and 750 feet from the east line of the Nancy E. Leedy, in the N half, Section 14, produced an initial of 50 bbls. In Seneca County, Jackson Township, the Kansas-Ohio Oil & Gas Co.'s test on the R. E. Harrison, NE Section 1, showed 5 bbls. initial at 1,330 feet, or 42 feet in the Trenton. J. H. Murphy & Son's second test in the southwest corner of the Mary E. Crum farm, SW Section 6, Clinton Township, is a light gas well in the Clinton lime at 520 feet. This large area covering at least four counties, Seneca, Sandusky, Ottawa and Huron Counties, southeast of Toledo, is being more thoroughly tested than ever before, and mostly for natural gas. The wells are not of any great volume, but help out materially the pipe lines handling the fuel. The gas is usually found in the Niagara or Clinton formations, several hundred feet above the Trenton limestone formation, and offside to the producing oil territory.

Seneca County

In Liberty Township, Seneca County, McPherson & Fossum Co., of Lima, Ohio, drilled a dry hole 100 feet from the south line and 1,550 feet from the west line of the Charles and Otto Ewalt farm, SW, Section 36. Trenton was topped at 1,481 feet and drilled 65 feet in the lime to a total depth of 1,550 feet. Honey Creek Oil Co. is drilling on the Gilbert Berton farm, Section 33, Scipo Township, same county, and if that develops either oil or gas worth while it will bring about quite a drilling campaign. C. L. Williams is working on the P. Stuckey, Section 32, Bloom Township, same county, a long distance from any known production of either oil or gas. Donnell and others are reported drilling on the M. M. Grimes, Section 12, Hopewell Township, same county.

The Recovery Oil & Gas Co. is drilling a wildcat on the J. S. Burch farm, Section 17, Butler Township, Mercer County, and may find either oil or gas and if such is the case it will mean a little extension to the old time development work in that part of the country.

W. C. Richards and others are drilling a third venture on the John G. Gnepper farm, Section 19, Salem Township, Ottawa County, looking more for a gas well than for oil.

CENTRAL OHIO

Development work shows a slight falling off in the Central Ohio Field, which possibly is due to the extreme hot weather and scarcity of water in some sections. The week's figures show 19 completions, four producers with an initial of 269 bbls.; four dry holes and 11 gas wells, and in new work 16 new locations were staked, and 20 wells started spudding, a total in new work of 36.

In Medina County, Chatham Township, The Oko Oil & Gas Co.'s No. 37 Watson-Sanford, Lot 10, reported with an initial of 10 bbls. M. and S. Burtner's test on the V. A. Vandemark, Lot 27, Harrisville Township, developed a dry hole.

Wayne County reports one completion being the Ohio Fuel Gas Co.'s No. 1-5,095 John Begley, Section 18, Chester Township, and is a gas well.

Holmes County is credited with a single completion in the Ohio Fuel Gas Co.'s No. 1-5,143 Valentine Mellor, Section 20, Richard Township, which was a duster.

Coshocton County brought in two gas wells in the Ohio Fuel Gas Co.'s No. 2-4,993 John C. Scott, Section 21, Newcastle Township, at from 2,984-3,032 feet, and McClay Brothers' test on the Ashcraft, in Pike Township, is a nice gas producer from 2,897-2,911 feet.

Summitt County's only completion was F. A. Brendall and others' No. 3 Charles Smith, Section 34, Franklin Township, which is a fair gas well, the gas being found in the Red sand from 3,685-98 feet, but failed to find any gas in the Clinton lime from 3,919-37 feet.

Licking County has one of the best oil producers in the field for the week being F. M. Rugg, trustee's test on the J. H. Willie, Section 14, Fallsburg Township, from 2,890-2,943 feet. Wittmer Properties, trustee, has a light gas well in No. 4 on the Sam Mossholder, Section 13, same township, from 828-32 feet, and may be drilled to a greater depth at some time, although completed for the present. Murphy Brothers made a location on the Eli Clark, same section, and Emerald Petroleum Co. set a stake on the Charles A. Weakly, Section 17, same township.

Muskingum County failed to make its usual fine showing of oil producers. The Athey Co.'s No. 1 Minnie A. Werner, Section 7, Wayne Township, topped the lime at 2,496 feet and was dry from 2,775-3,565 feet, a heavy dose of water being found at 3,300 feet. The Clinton was also dry from 3,749-53 feet, total depth of the hole. H. C. Farmer reports a fair gas well on the Ira L. Shurtz, Section 20, Harrison Township, same county, in Clinton lime at a total depth of 4,041 feet. Wittmer Properties, trustee, found a 4-bbl. pumper in a second test on the I. B. Baker, Section 11, Perry Township, same county, at 3,038 feet. The Pure Oil Co. is drilling on the Frank McKeem, Section 6, Jackson Township, same county.

Athens County

Athens County reports three completions, the Wittmer Properties, trustee's No. 1 on the Hocking Fire Clay lands, Section 23, York Township, being a fair gas well. In Ames Township the Ohio Fuel Gas Co. has two light gas wells in No. 1-5,171 J. J. Joy, Section 6, from 1,558-74 feet, total depth 1,583 feet, and No. 1-5,169 T. M. Fleming, Section 4, same township, from 1,297-1,313 feet, total depth 1,320 feet. Orange Gas Co. is drilling No. 12 Emery L. Chapman, Section 19, Carthage Township, and Bowser & Gunther are drilling No. 3 Fred R. Cooley, Section 26, Alexander Township, while Gross, Freebault and others are drilling a second test on the E. Knowlton, fractional Section 25, Lee Township.

Tuscarawas County had two new completions, both in Washington Township, the Hopewell Oil & Gas Co.'s No. 1 Stewart Asher, Section 18, producing 100 bbls. initial from 3,635-42 feet, and the Gordon Oil Co.'s No. 2 George W. Asher, Lot 31, a dry hole at 3,647 feet.

Fairfield County's latest completion is the Ohio Fuel Gas Co.'s No. 2-5,213 Edward W. Eyman, Section 5, Rush Creek Township, which is a light gas well in the Berea sand at 810 feet. No. 3, same farm, is drilling, and Merle Myers and others are drilling No. 4 Jess D. Zartman, Section 1, same township.

In Guernsey County, Spencer Township, the Ohio Fuel Gas Co.'s No. 1-5,158 H. C. Hallett, is reported good for 5 bbls. initial in the Berea sand at 1,385½ feet.

The Oko Oil & Gas Co., of Lima, Ohio, has purchased outright the producing oil properties of the Wiser Oil Co. in what is known as the Lodi Field in Medina County. The transaction takes in the transfer of three leaseholds including the Celestia Richards 11-acre tract, Henry Essig 100 acres and the J. McVickers 124 acres. The Oko Oil & Gas Co. with Mack P. Colt, one of the best known operators in the oil fields of Ohio, as president, and H. L. Pew, secretary-treasurer, closed the deal. The new owners are starting a well on the H. Essig, about 150 feet north of No. 15, and locations have been made for a new well each on the Celestia Richards and McVicker farms. The new purchases are close up to the producing wells of the Oko company and all will be operated as a unit.

The Wiser Oil Co. has leased a block of more than 1,400 acres about 4 miles west of Elyria, and to the northwest of the gas development under way in Carlisle Township, Lorain County, the leases being in Amherst Township, same county.

INDIANA

Considerable new test work is starting in many areas of Indiana, the bulk being done in the Oakland City-Princeton area in the southwestern portion of the State and in the extreme southern part, across the Ohio River from the Tri-County Field of western Kentucky.

One of the good Indiana completions of late is the Texana Oil Co.'s second test on the S. M. McCullough farm, Section 10, Barton Township, Gibson County, in the Princeton Field, which showed an initial production of 60 bbls. from a depth of 1,380 feet. C. C. Taliaferro, Jr., has started another well on the Lew George farm, in Washington Township, same county. The Big Four Oil & Gas Co. is drilling No. 4 C. T. Sloan, Section 18, and the Indiana Oil & Gas Corp. is drilling No. 1 Perry Colvin, Section 6, same county.

E. C. Bolds has abandoned Nos. 1 and 3 Everett Atkins, NW, Section 23, Logan Township, Pike County, and is drilling No. 6, same farm. Rischer and others are drilling on the Charles B. Crow, not far from the school house at the hamlet of Alford, and unknown parties have made a location on the Prentice Crow farm, same area.

Conyers, Roetzel and others found a gas well showing for 500,000 feet on the Frank Cassidy, Section 25, Clark Township, Perry County, at 500 feet, while the Ohio Oil Co.'s test on the William

(Continued on Page 174)

FORTY-TWO KENTUCKY COMPLETIONS SHOW 1,398 BARRELS INITIAL

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., July 14.—A large number of wells were completed in the Kentucky fields, there being a total of 42 of which 25 were producers with an initial production of 1,398 bbls., 11 dry holes and six gas wells. Most of the new wells are in Ohio County, which is credited with 26 completions, 17 of which were producers with an initial of 1,018 bbls., six dry holes and three gas wells. Daviess County was second with eight completions, six producers with 210 bbls. initial, the other completions being in Warren, McLean, Henderson, Webster and Muhlenberg in the western Kentucky Field and one well was brought in in Clay County in the eastern division.

The outstanding well of the week was drilled by Doctor Sirman on the Homer Crossler farm, in the Red Hill Pool, of Daviess County, with a production close around 75 bbls. from the Stray sand, up to date the largest Stray sand producer in the county. Heretofore the Stray sand wells in Daviess County were rather small and this new find may bring about a new producing formation of value, similar to what happened in Ohio County when the first good producer was found there in the same formation. It is this Stray sand that has built up the production in the Tri-County Field, known as the Owensboro Field, as well as the Hartford Field, as the big production comes from the Hartford area.

Ohio County

The Buford shallow sand producing area in western Ohio County, is getting the heavy play at this time and a large number of excellent initial producers have been discovered since the last field report from the county. In this pool the Chester Oil Co.'s Nos. 1, 2 and 3 on the G. W. Patton farm, produced 80, 80 and 120 bbls. initial from the Stray sand. Same company's Nos. 9 and 10 M. Medcalf farm, Deanfield Pool, produced 20 bbls. each initially.

Cumberland Petroleum Co.'s No. 1 Small Skillman lease, Buford Pool, produced 80 bbls., and No. 2 showed 60 bbls. initial. Nos. 1 and 2 on the W. A. Moseley, same pool, produced 80 bbls. each in 24 hours. Same company's No. 1 E. L. Massie, same pool, produced 30 bbls. initial, while Nos. 8 and 9 W. Hamilton farm, same pool, produced 80 bbls. each from the Stray sand, same pool.

Rex-Pyramid Oil Co. drilled a dry hole in No. 1 on the Westerfield heirs property, also a dry hole in No. 7 S. C. Rhodes farm, in the Buford Pool.

C. M. Root's No. 3 on the Olden Lake farm, in the Buford Pool, produced an initial of 20 bbls., while L. C. Young's test on the Cicero M. Wade farm, same pool, was a duster.

Penn-Indiana Oil Co.'s No. 18 on the C. A. Kelley 260 acres, in the Deanfield Pool, produced 85 bbls. initial from the Stray sand, and S. R. Nigh and others' No. 14 on the A. P. Kelley 340 acres, produced 58 bbls. from a depth of 712 feet.

The Ohio Oil Co. drilled a dry hole on the A. R. Richards farm, at a depth of 585 feet. Wood Oil Co. also got a duster in a second test on the Charles Bowman farm, at 780 feet.

James C. Ellis and others struck a gas well reported with a volume of 750,-

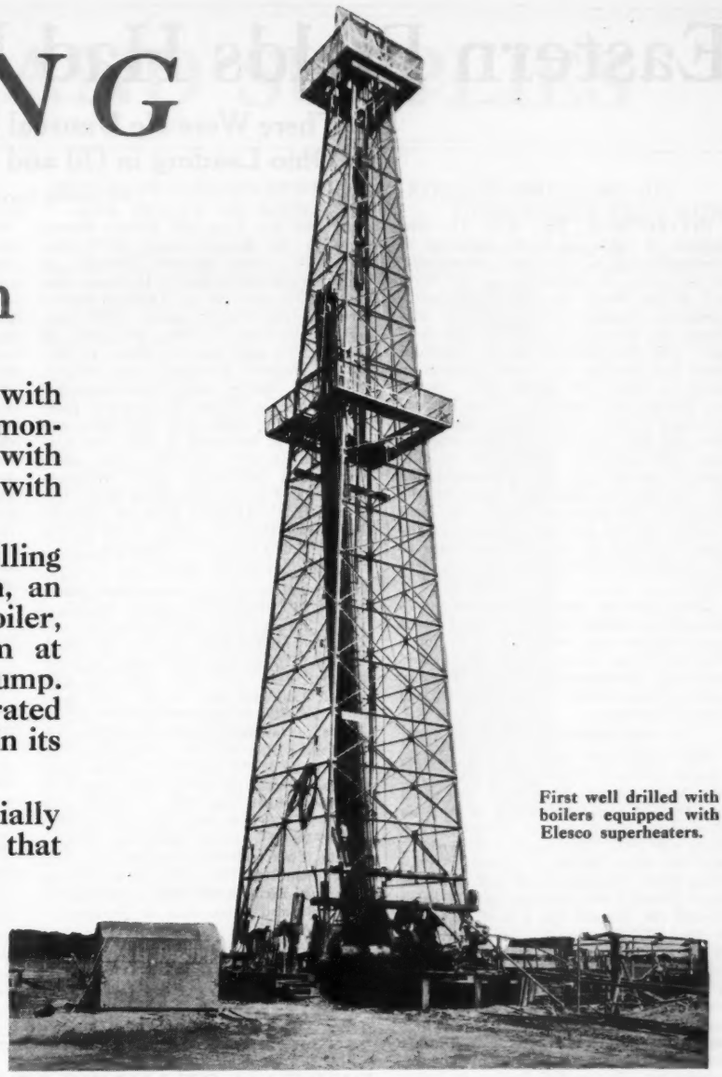
(Continued on Page 174)

DRILLING
With
Superheated Steam

Recently conducted tests in oil-well drilling with boilers equipped with Elesco superheaters demonstrate that speedier drilling is accomplished with smaller boilers and lower steam pressures than with saturated-steam boilers.

Without complicating the arrangement of drilling rig or introducing new problems of operation, an Elesco superheater, applied integrally to the boiler, makes available dry, high-temperature steam at higher pressure at the drilling engine and fluid pump. Under these conditions, the drilling rig is operated at a much faster rate, resulting in an increase in its capacity and flexibility.

The Elesco firetube superheater, designed especially for oil-country boilers, is similar in design to that used extensively in locomotive practice. It is a thoroughly practical and simple arrangement. It is backed by the world's largest superheater manufacturer—having experience in superheater applications to all types of steam boilers throughout the world.



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PITTSBURGH

Eastern Fields Had More Completions

But There Were No Unusual Wells on the List, Southeast Ohio Leading in Oil and West Virginia in Gassers

By Special Correspondent

PITTSBURGH, Pa., July 14.—The eastern oil fields are in the doldrums of overproduction, a reflection, undoubtedly, of the crude oil conditions in the West and Middle West. For the first time a concerted attempt is to be made to stabilize the Pennsylvania crude oil market. The five-spotting in the Bradford fields has resulted in a daily production there in excess of 30,000 bbls., which has thrown the industry out of balance resulting in the lowest price for crude since the war days of 1915. The curtailment will probably affect new completions in the oil sands of the eastern fields but this may be more than offset by the tapping of additional gas reserves in West Virginia for the increased amount of gas made necessary by the new gas lines to the eastern seaboard and cities along the route.

There were no unusual completions in the eastern fields during the past week even though there were a greater number. Southeast Ohio continued to lead in new oil production, and West Virginia in gas. A few gassers were reported from Pennsylvania.

SOUTHEAST OHIO

The largest well reported was in Muskingum County. There in the NW Section 18, Hopewell Township, the Midland Oil Co. completed No. 4 on the Ella M. Denney farm to the Clinton at a depth of 3,185 feet and it flowed 35 bbls. the first 24 hours natural. After being shot, it produced 120 bbls. the first day. Further development in this county was the Cannon Oil & Gas Co.'s test in the NE Section 3, Clay Township, on the Earl Baughman farm. This was drilled to the Clinton sand at a depth of 3,695 feet and was shut down at 33 feet in the sand with a production estimated at 756,000 feet of gas. The owners expect to drill it in later. The other two completions in this county were disappointing. In the SW Section 6, Union Township, the Atha Oil Co. completed its test on the Ed Redmond farm to the Clinton and continued 200 feet below the sand to a depth of 4,300 feet and it was dry. The same company completed its test on the Zanesville Bank & Loan Co. property in the NE Section 7, Wayne Township, 3,900 feet to the Clinton sand and it was also dry.

In Guernsey County, the East Ohio Producing & Refining Co. completed its test on the E. C. and Verna A. Quillan farm, in Section 10, Wheeling Township. It was drilled to the Niagara lime 3,522 feet, and produced 85 bbls. natural the first day. In the NW Section 3, Cambridge Township, the Preston Oil Co. completed its No. 1 test on the Isaac J. Oldham farm to the Niagara lime and it was a duster.

Perry County had only one completion. The Allegheny Oil Co. completed No. 17 on the W. C. Longstreth farm, in Section 32, Pleasant Township, to the Berea sand at 1,123 feet, and it produced 5 bbls. the first 24 hours after shot.

Tuscarawas County

In Tuscarawas County, Lot 35, Washington Township, the Gordon Oil Co. and others completed No. 3 on the Ralph Huffman farm to the Niagara lime at 3,675 feet and it produced 15 bbls. the first 24 hours after shot. In the same township, but on Lot 31, and on the George W. Asher farm, the same company completed No. 2 to the Niagara lime to the same depth and it made a small showing of oil and gas and was abandoned.

In Washington County, there were three producers and one dry hole completed. On Lead Sheets Run, Grandview Township, W. H. Holland and others completed No. 8 on the Collins Sisters farm to the Keener sand, 1,612 feet, and it is a 4-bbl. pumper natural. In the same township, McVey Brothers completed their test on the Cordery Sisters farm to the Squaw sand, 1,827 feet, and it produced 3 bbls. the first 24 hours. This well was not shot. In Section 8, Palmer Township, this county, Robert W. Turney and others completed No. 12 on the Myron E. Leasure farm to the Peeker sand, only 482 feet, and after shot it produced 3 bbls. the first day, and it will probably settle down to about a half-barrel well. Wharden Fulmer and others completed their test on the E. C. Allaway farm on Allaway Run, Grandview Township, to the Squaw sand at 1,628 feet and it was dry.

In Meigs County, there were two gas wells completed in the deeper Shale sands. In Lot 246, Sutton Township, this county, the Twenty Five Associates, Inc. and others completed their test on the Clark Jividen farm to the Shale sand, a depth of 3,642 feet, and after shot the well gauged 1,360,000 feet of gas. One hour after the shot it gauged 12,000 feet. In the same township, and in Section 13, the Ohio Fuel Gas Co. completed its test on the B. N. and E. L. Salser farm to the Shale sand at the same depth of the above well, and it is a gasser estimated at 369,000 feet. In the shallow sands, in this same township, Section 11, the Twenty Five Associates, Inc. and others completed No. 20 on the William Carnahan farm to the Cow Run sand at 642 feet, and after shot it produced 4 bbls. the first 24 hours.

In Jefferson County, Graham & Co. completed their test on the George H. Smith farm, in Section 17, the southwest quarter, Island Creek Township, to the Berea at 1,300 feet and it was shot and is showing for a 2-bbl. pumper.

WEST VIRGINIA

The best oil well completed in this section of the eastern fields was drilled in by the Virginian Gasoline & Oil Co. on the Brown, Swan, Goshorn and Stinnett lease in Henry district, Clay County. It was completed and shot in the Big Injun sand and is estimated to have started at 50 bbls. a day and will probably make a 10 to 15-bbl. pumper. In the same district of Clay County, the South Penn Oil Co. completed No. 9 on the A. B. Hicks farm to the Big Injun and after shot it is estimated at 15 bbls. a day. The South Penn Oil Co. completed another well in this district, No. 9 on the N. G. and R. P. Parker farm. It was drilled to the Big Injun sand and is good for a 10-bbl. well after shot.

In Reedy district, Roane County, the Hope Construction & Refining Co. completed No. 1,107 on the L. Vandale farm to the Berea sand, at 2,600 feet. It was shot and is good for 10 bbls. a day.

On the right fork of Twelve Pole Creek, Butler district, Wayne County, 2 miles south of Wayne, Meabon and Huffman completed their test well on the Joseph Jackson farm to the Berea sand. After shot it is showing for a 2-bbl. pumper from that formation and is about a mile from production.

Gas Wells

In Calhoun County, there were several fair gassers completed and one old well drilled deeper. On the waters of Big Root Creek, Sheridan district of this county, Ira Haught and others completed a very fair gasser in their test on the Alva Elder farm. It was drilled in the Injun sand and is good for 1,000,000 feet. Godfrey L. Cabot completed his No. 710 on the Harvey Buckley farm, in Sherman district, to the Injun sand at 2,018 feet, and it is a good gasser natural. In Center district of this county, F. F. McIntosh and others completed their test on the Tell McDonald farm to the Injun sand and have a fair gasser. This well was not shot. In the same district and county, the Chemical Oil Co. drilled No. 20 on the Bennett heirs farm deeper to the Berea. It was shot in the Squaw sand and showed for a light gasser.

In Cabell County, a mile and a half east of Salt Rock Post Office, the Larner Gas Co. completed and shot No. 95 on the B. and R. McComas farm in the Brown shale and have a gas well good for 200,000 feet. In Barboursville district, of this county, the United Fuel Gas Co. drilled No. 4,244 on the J. A. Dunkle farm to a depth of 3,052 feet and have a light gasser.

In Clay County there was but one gas well completed. It was drilled in by the Virginian Gasoline & Oil Co. and was its No. 4,000 Brown, Goshorn and Swan, Henry district. Completed at a depth of 1,903 feet, Big lime, it is a small gas well.

Kanawha County had several completions. In Louden district, the United Fuel Gas Co. drilled No. 4,245 on the J. W. Miller farm to the Big lime at 1,157 feet. It is gas estimated at 500,000 feet a day. The same company completed No. 4,216 on the J. D. Campbell farm, Big Sandy district, to the depth of 1,788 feet and has a fair gasser. G. L. Cabot completed No. 3 on the William Tomkins farm in Malden district at 2,480 feet and it is a light gas well. In Cabin Creek district, the Cannelton Coal Co. drilled No. 3 on its own property to a depth of 3,098 feet and has a well estimated at 196,000 feet.

In Fayette County, Groscup and Schultz completed No. 3 on the Black Betsy Coal Co. tract and have a gasser good for 336,000 feet from a depth of 3,155 feet.

In Jackson County there was but one completion. Here, Lee Sheppard and others completed their test on the Wesley Streets farm, in Washington district, to a depth of 2,640 feet and it is dry. This well may be drilled deeper.

In Logan County a fair gasser was completed by W. J. Peterman in his test of the George W. Ball farm in Logan district. It is estimated good for 500,000 feet from the sand at 2,428 feet.

In Marshall County there were two gas wells completed. Here Fry and McCracken completed No. 1 on the John McGinnis farm to the Salt sand at 1,544 feet. It is fair, and in Cameron district. Also in the same district, the Manufacturers Light & Heat Co. completed No. 2,617 on the John Fletcher farm deeper to 2,728 feet and it is gas.

In Monongalia County, two wells were completed in the Bayard sand. The Manufacturers Light & Heat Co. completed its test on the H. E. Bean farm, Battelle district, at 3,625 feet, and it is a light gasser. In the same district, the Philadelphia Gas Co. completed its test on the B. S. Bissett farm, also to the Bayard sand, and has a good gasser from the Fourth sand at 3,564 feet.

In Mingo County, the Kermit Gas Co. brought in a very fair gasser good for 900,000 feet from the Brown shale at 2,973 feet on the George and R. C. Wiles farm in Hardee district.

New Tests

On the waters of Leading Creek, Center district, Calhoun County, A. H. Jackson has completed a rig and started drilling for his test on the Lloyd Louden

(Continued on Page 178)

BUREAU OF MINES STATISTICS ON PETROLEUM, MONTH OF MAY

According to reports received by the Bureau of Mines, Department of Commerce, the production in the United States during May, 1930, amounted to 80,176,000 bbls., a daily average of 2,586,000 bbls. This compares with a daily average of 2,573,000 bbls. in April, 1930, and with a daily average of 2,723,000 bbls. for May, 1929.

Texas, the leading producing State, recorded a slight decline in daily average production in May. California, the third ranking State, also recorded a decrease in daily output in May; this was due primarily to declines in the Santa Fe Springs and Long Beach Fields. Oklahoma, the second State in importance, recorded the largest gain in daily average production in May of any of the states. The increase in production in Oklahoma was due largely to new flush production in the Konawa Pool of the Seminole district and to an increase in the allowable production in the Oklahoma City Field. Both Kansas and New Mexico showed material gains in crude petroleum production in May, the results of new developments in the Voshell and Hobbs Fields, respectively.

Stocks of crude petroleum, both in California and east of California, declined in May. The decrease east of California amounted to nearly 1,000,000 bbls., that in California to over 1,300,000 bbls.

Stocks of gas oil and fuel oil increased slightly over 3,000,000 bbls. in May, whereas gasoline stocks declined only about 400,000 bbls., much less than the corresponding decline in 1929. Accordingly, total stocks of refined oils showed a much higher increase in May than in April, hence total stocks of all oils showed an increase of 1,266,000 bbls. in May as compared with a decrease of 1,894,000 bbls. in April.

Refined Products

Runs to stills of crude petroleum totaled 83,647,000 bbls., a daily average of 2,698,000 bbls. This represents an increase of 17,000 bbls. over the daily average of April, 1930, but is 25,000 bbls. below the daily average runs of May, 1929.

The daily average production of motor fuel amounted to 1,267,000 bbls., a slight decline from the April average. Stocks of motor fuel, as of May 31, totaled 54,046,000 bbls., which compares with 54,435,000 bbls. on hand May 1 and with 44,672,000 bbls. on hand May 31, 1929. Daily average exports of gasoline declined 16 per cent from April. The indicated domestic demand for motor fuel amounted to 36,497,000 bbls., a daily average of 1,177,000 bbls. This represents an increase over May, 1929, of 6 per cent. At the current rate of total demand, the motor fuel stocks of May 31 (54,046,000 bbls.) represents 40 days' supply as compared with 41 days' supply on hand a month ago and 35 days' supply on hand a year ago.

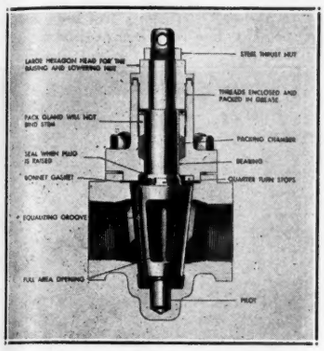
The refinery data of this report were compiled from schedules of 352 refineries, with an aggregate daily recorded crude oil capacity of 3,683,350 bbls., covering, as far as the bureau is able to deter-

(Continued on Page 102)

EQUIPMENT AND SUPPLIES

BUSINESS OF COLUMBUS VALVE CONCERN BOUGHT

The latest move in the Michigan Valve & Foundry Co.'s carefully planned expansion program has been the acquisition of the business, plant and assets of the



Columbus Valve & Manufacturing Co. of Columbus, Ohio, maker of plug type valves. The plug type valve manufactured under the present organization has a wide range of pressures and incorporates developments of especial interest to the petroleum and natural gas industries, for any work where pipe pressures and velocities are high or where high pressure is accompanied by high temperature conditions. This valve is a supplement to the extension line of standard gate valves, sluice gates and hydrants made by the Michigan Valve & Foundry Co.

The Michigan Valve & Foundry Co. is licensee under the Meehanite metal patents and is using this metal generally throughout its manufacturing operations. Consequently Meehanite will be utilized to extend the working range of both Michigan plug valves and Michigan gate valves. The Columbus plant will continue to be used exclusively for plug valve production, while the gate valves, sluice gates and other Michigan products will be handled by the Detroit plant. The operations of both plants will be directed by R. J. Goldie, the company's general manager. Executive offices remain in Detroit.

Arch F. Campbell has been appointed Mid-Continent representative with headquarters in Tulsa. He was with the Fenwick-Reddaway Manufacturing Co. for the last 10 years. George N. Belser will be associated with Mr. Campbell.

FOUR WHEEL DRIVE BIRTHDAY

The Four Wheel Drive Auto Co., Clintonville, Wis., will celebrate its twentieth anniversary of corporate existence July 21. From a humble beginning in a rented blacksmith shop, owned by Otto Zachow, the inventor of the basic feature of the FWD truck, the company now has properties under roof covering about 280,000 square feet of floor space. The physical properties represent a value of about $1,385,000 in Clintonville, Boston, New York, Washington, D. C., Harrisburg, Atlanta, Chicago, Milwaukee, Kansas City, San Francisco, Los Angeles, and in Kitchener, Ontario. From the force of 1910, consisting of the master blacksmith and his two helpers, the payroll of the company has grown to 750.

The Webster Engineering Co., Tulsa, has been made the exclusive distributing agency for Wilgus gas pressure regulators and N.G.E. gas burners in the Mid-Continent territory. The Tulsa office of Natural Gas Equipment, Inc., Los Angeles, Calif., has been combined with the Webster organization.

CENTRALLY CONTROLLED LUBRICATORS DESIGNED

The centrally controlled Hills-McCanna lubricating system consists of one regular 24-pint 30 feed motor driven lubricator, and one regular 22-feed motor driven lubricator. The two units combined make a total of 52 feeds or "oil loads." Two 50-gallon storage tanks are provided to feed oil to lubricators by gravity. Sight glass oil level indicator and a float valve are mounted on the reservoir of each of the two lubricator units. The flow of oil is automatically regulated and fed from the large central supply tank. Replenishment of the oil supply to lubricator reservoirs is mechanical and fillings are eliminated. The need for an oiling crew is dispensed with.

Though operated by a single driving mechanism, each feed of the lubricating units is independent, and may be adjusted to deliver the desired quantity of oil the individual part requires. The amount of oil being fed to bearings or cylinders may be checked at any time by the "blinker" or sight feeding device mounted on each lead. All working parts are accessible and are mounted above the reservoir. The supply tank, feeds and oil lines are carefully sealed against contamination of the oil supply by moisture or dust.

Central control of the oiling virtually eliminates the dangers of hand oiling, waste of oil, and forgetfulness. It also permits isolating the lubricators and oil supply, reducing fire risks. Sawdust, moisture and dirt are kept from the bearings and rollers and each receives a predetermined quantity of clean, fresh oil at regular intervals.

The simplicity of principle, design and construction permits these lubricators to give positive oiling service and to run for months at a time with only casual inspection. Each feed represents a separate pumping unit. Adjustments or regulations can be made without shutting down the plant equipment.

Three new sales offices have been opened by the Louis Allis Co., Milwaukee, Wis., makers of motors. They follow, with the men in charge: Pittsburgh, Pa., C. O. Sargent; Tulsa, W. Woobank; Los Angeles, Calif., A. R. Thomas.

INGERSOLL-RAND OFFERS AIR HOIST IN NEW SIZE

The Ingersoll-Rand Co., New York, has introduced a new size "Utility" portable air hoist of 2,000-pound capacity.

"Utility" hoists, in capacities up to 1,500 pounds, have been used by miners and contractors for three years. The addition of the 2,000-pound size makes this type of hoist available for other classes of work, including that of the oil field, such as skidding timbers, handling pipe, hoisting material, erecting tanks, etc.

The fact that the hoists are of comparatively light weight permits them to be readily moved about wherever there is work to be done. The hoists can be bolted to a timber or mounted on a post or steel column in any convenient location.

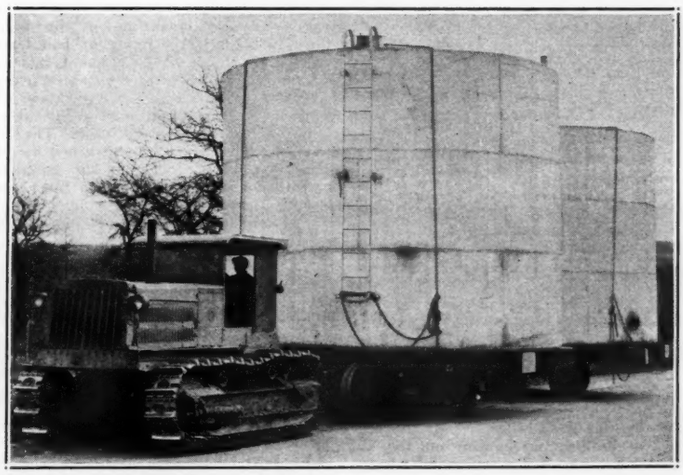
The "Utility" employs a radial, four-cylinder, counterbalanced, reciprocating-piston-type air motor, which is reversible. All wearing parts and cylinders are easily renewable, and the cylinders are interchangeable.

The reduction gears between the motor and drum are all machine-generated spur gears cut from carefully selected materials, and, wherever necessary, they are heat treated to insure strength and wearing qualities. The gears are completely inclosed in a housing, which excludes all dust and permits the gear to operate in a bath of semifluid grease.

REDUCES TROUBLE FROM SAND

New features have been embodied in the construction of the New Improved Superior sand strainer, according to the Superior Sand Strainer Co., Tulsa. The device is mechanically designed to permit the oil to pass through it freely and to prevent sand and grit from getting into the working barrel. The entire heavy brass screen surface strains at all times, the manufacturer says, and does not become clogged. The strainer completely encloses the perforations and protects the working barrel, cups, valves, balls and seats. It also keeps the gas from working on the valves and helps to prevent cut oil.

MONARCH "75" TRANSPORTS TWO 1,200-BARREL TANKS



The Carter Oil Co. recently was confronted with the task of moving two 1,200-bbl. tanks from Cromwell, Okla., to the Earlsboro fields at East Earlsboro. These tanks were 19 feet high and 15 feet wide. They weighed about 18 tons. After mounting the tanks on trucks and hooking on with a tractor, the 25-mile trip was made in 10 hours' running time. An Allis-Chalmers Monarch "75" furnished power to tow the tanks over the highway.

ROLLER DRILLING BIT UNDERGOES TEST RUNS

The Globe Oil Tools Co., Los Nietos, Calif., has completed a series of test runs on its new roller drilling bit, and reports that it has proved satisfactory in every way. The new bit is said to cut soft formations as fast as any type bit, although especially designed for formations too tough for fishtail and drag-type bits, but in which a rock bit does not perform at its best, such as tough shale and conglomerate.

In these tests, the roller, scraping and slicing action of the new bit is said to have demonstrated that less weight is required to penetrate the formation, because only half of the cutting edge of the bit touches the bottom at one time. Also, owing to the roller action, every available inch of cutting edge does its share of cutting the outside gauge. The reaming edges keep the hole to full gauge, and a fresh bit can be run to the bottom of the hole without reaming the hole previously made. Circulation falls between the cutters, completely cleaning them as they rotate past the circulation blast.

BOOKLET ON PIPE PROTECTION

A new booklet, "The Protection of Oil and Gas Lines," is issued by the Wailes Dove-Hermiston Corp., New York, a firm which has specialized for nearly half a century in the development, manufacture and application of various kinds of anti-corrosive and waterproofing compositions. One chapter of the booklet is devoted to illustrations showing that practically all of the large oil and gas trunk line systems have been safeguarded against corrosion. In each of these cases, the engineers have chosen well known protective coatings which have a record of satisfactory performance over long periods of time and under all types of service conditions. Among the natural gas projects cited are the Interstate, Empire, Amarillo-Denver, Memphis, St. Louis and Birmingham lines. Oil trunk lines having been protected partly or entirely by similar applications of bitumastic coatings include the old Valley pipe line in California, the 500-mile Atlantic line in Texas and the Ozark line from St. Louis to Hammond, Ind.

The causes of corrosion, the need for positive protection and the 14 requirements of an effective pipe coating are discussed. Practical recommendations are given concerning the best type of protection for installations of various kinds and methods of application are described.

CORONA SILICA EXPANDS

Corona Silica, Inc., Rogers, Ark., has started construction of an additional unit to its plant. The unit and other additions, which will cost in the neighborhood of $225,000, will increase the capacity of the plant 1,000 bags or approximately 40 tons daily. The company mines silica for drilling mud purposes.

EQUIPMENT AND SUPPLIES

MR. TIDD CONTINENTAL SECRETARY-TREASURER

Luzerne M. Tidd, recently made secretary-treasurer of the Continental Supply Co., St. Louis, Mo., started with that organization as a floor man in Drumright, Okla. Promotions followed steadily. After being advanced to the position of manager of the Eldorado, Kans., store, he was made manager of the store in Bartlesville, Okla.

Luzerne M. Tidd

In these positions Mr. Tidd showed marked aptitude for organization work, with the result that in January, 1929, h was transferred to St. Louis to become assistant to H. Brooks Gutelius, president of the company. His first undertaking was that of reorganizing the company's staff in the Alberta, Canada, territory and introducing new methods there. This finished, he was set to work organizing European extensions. He spent more than five months in Rumania, during which he made a complete survey of that market and established Continental Supply Co. offices. He also established an executive office in London, England, for the management of European developments.

Mr. Tidd was born in Webster, Mo. While attending the Missouri School of Mines, Rolla, he became a member of the Sigma Nu fraternity. He is a thirty-second degree Mason. In the World War Mr. Tidd served first as an officer in the Eighty-ninth Division and then was transferred to the Air Service as a lieutenant in aerial observation. He is a past commander of the Bartlesville post of the American Legion.

INDUSTRY TAKES UP MOVIES

Among completed work of the Mid-Continent Pictures Corp., which uses the multicolor system of color processing, are a two-reel silent film in color, "The Spartan Legion," for the Spartan School of Aeronautics, Tulsa, and a one-reel talking production for the Caterpillar Tractor Co., San Leandro, Calif. Two pictures in color in course of production are one for the Mid-Continent Petroleum Corp. and one for the Coe Laboratories. The Mid-Continent Pictures Corp., formed three months ago, is headed by Tom Edgar, of the Edgar Music Co., Tulsa. Rudolph W. Bruns, Tulsa, is secretary. The general production manager is F. H. Herrick, of Hollywood, Calif.

TRUCK UNDERGOES HARD TEST

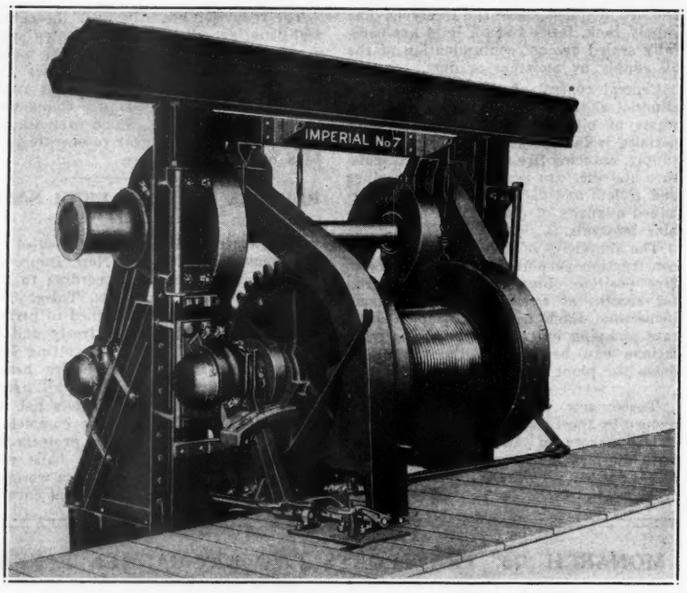
Ten thousand miles of continuous driving in two weeks was the test to which a new Federal Model D experimental truck was put before it was pronounced O.K. to go into production as a member of the Federal line of motor trucks. The test included operation under conditions far more severe than any to which the truck would be put in actual service. With a 2-ton load it was driven through mud and sand, up and down steep grades and wide open along the highways, 24 hours a day, with three shifts of drivers. The test was the culmination of three years of experimental work in developing Federal's new 1 and 1½-ton trucks. The entire test run was made without a breakdown and without overheating, the manufacturers say. At the conclusion of the test, a check of the engine is said to have revealed that it had not weakened under the gruelling driving.

SIMPLIFIES WELDING WORK

The Clark Truewelder is a mobile, self-contained, gas-powered, electric arc welding unit, capable of 24 hours' continuous operation and especially useful in places and on work where there is no convenient source of electric power. The Truewelder takes the welding equipment to the work. The sturdy, compact, self-propelled outfit reduces time and distance, eliminates waste time in moving from job to job and increases welding time. A high level of working capacity per unit and output per day is maintained and costs per weld are low.

The unit is equipped with self-starter and headlights, carries all necessary welding accessories (General Electric standard), has ample room for acetylene tanks (for cutting), seating room for crew and power for towing trailers. The Truewelder is manufactured by the Clark Tructractor Co., Battle Creek, Mich.

IMPERIAL NO. 7 HOIST FOR DEPTHS TO 5,000 FEET



The Oil Well Supply Co., Oil City, Pa., recently announced the new Imperial No. 9 rotary hoist for drilling in excess of 10,000 feet. Although the trend in drilling is toward deeper and deeper holes, there is much need for a rotary hoist to meet the demands of drilling to moderate depths.

The new Imperial No. 7 rotary hoist, recently announced, is especially designed for drilling to depths up to 5,000 feet. It is of the two-post, three-shaft, four-speed, roller-bearing type. It is similar in general design to the Imperial No. 9 and embodies the one-piece balanced drum, mounted on an alloy steel drum shaft, 7 inches in diameter between bearings. The line and jack shafts are each 6 inches in diameter. The chief difference between these two new hoists is in the construction and arrangements of the braking mechanism.

The braking mechanism on the Imperial No. 7 hoist is a self-contained unit, mounted on the back of the hoist frame and is entirely independent of derrick sills, foundation, etc. No cutting or fitting is necessary when installing this type of brake, as brake-band anchor castings and brake-shaft bearings are definitely located on the frame supports, which makes mounting of the brake simply a matter of lining up bolt holes. The dead ends of the brake bands are adjustably anchored to the frame through heavy steel castings, the adjustment being simple, foolproof, and easily accessible at the rear of the hoist. The live ends of the bands are attached to opposite ends of a heavy bar equilizer, which, in turn, is pivoted in the center thus assuring absolute equal braking power, equal wear and maximum life for each band. The total braking area is 2,210 square inches.

All shafts are of alloy steel and are mounted in heavy-duty American roller bearings, placed in self-aligning housings. All shafts can be completely stripped of sprockets, clutches, drum and collars on the derrick floor. Complicated movements and connections are eliminated in the clutch shifting mechanism to assure convenience and safety in operation. Cumbersome forgings and castings have also been eliminated. All sprockets and clutch blocks are cast steel. All clutch sprockets are bronze bushed and Alemite lubricated; and all clutch jaws are hardened.

The jack shaft on the Imperial No. 7 rotary hoist can be furnished for steam or electric drives.

MEN KNOWN *in* THE EQUIPMENT FIELD

Although A. A. Kramer, founder and president of the Columbian Steel Tank Co., Kansas City, Mo., has been seen in person by few oil men, he casts a large shadow in this field on account of the improvements he has wrought in oil producing, refining and marketing equipment.

A. A. Kramer

In the 36 years of experience and swift growth of the Columbian organization, Mr. Kramer has turned out inventions by the hundreds, with as little fanfare as a clerk getting out monthly statements. Upward of 300 are protected by patents; other hundreds have been given freely to the advancement of the steel fabricating industry.

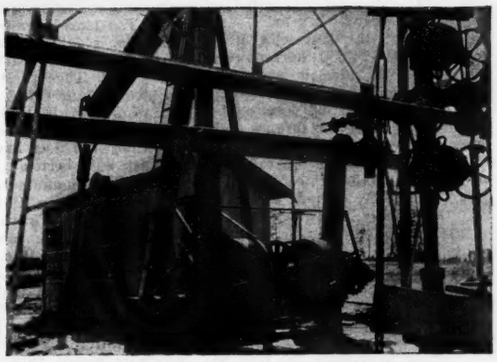
In his own city he is as little known personally. His name appears on important rosters and committees, but Mr. Kramer himself seldom appears. He has never made a speech although much importuned. When such invitations become too insistent he is wont to disappear in his private office and call on his secretary for protection. Otherwise he is easy to reach. Always he gives orders that he will see everyone who wants to see him if at all possible.

DIRT REMOVED FROM GAS BY UNIVERSAL SCRUBBER

The horizontal mist extractor scrubber, manufactured by the Hydrocarbon Apparatus, Inc., Los Angeles, Calif., is designed to remove oil, water, dirt, pipe scale and foreign matter from the gas. This separator is a part of the pipe line, giving a straightline flow. With its use no drips are necessary as it acts as an automatic drip. Each separator is complete with discharging device for oil and water. The discharge can be conveyed to a tank and all oil recovered. This makes drip men unnecessary.

According to the manufacturer the use of this device assures clean gas and prevents frozen lines or regulators, foul orifice meters or clogged and fouled consumers' meters. This type of mist extractor-scrubber is adapted for natural gasoline plants and are said to be especially suitable for refiners, for the scrubbing of vapors, steam and gas.

LUFKIN MODERN EQUIPMENT *means* ECONOMICAL PRODUCTION and A PERMANENT INVESTMENT



Humble Company's Williams No. 9, Humble field. Depth 4892 ft. Equipment: Lufkin 6½" rotary, Lufkin 522 Hoist with steel jack posts, Samson Post, Beam and Trout Pitman.

1. Low Lifting Cost;
2. Low Operating Cost;
3. Low Maintenance Cost;

The three big reasons why major operators prefer Lufkin Equipment.

Lufkin equipment is:

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EQUIPMENT AND SUPPLIES

PRESSURE AND FLOW ARE INDICATED AT ONE TIME

A new instrument of the U-tube manometer type has been designed by the Meriam Co., Cleveland, Ohio, to indicate simultaneously the line pressure and the rate of flow of liquids or gases in pipe lines. This type is expected largely to supersede the previous combination type for the same purpose which the company placed on the market last year, and which provided a set of two-way cocks by means of which the U-tube manometer could be either connected to the line so as to measure the differential pressure across the two sides of an orifice of known size inserted in the pipe line, thus measuring the rate of flow, or could be connected between the pipe line and the atmosphere, thus showing the line pressure above atmospheric. The change could be made in a few seconds, but it was not possible to reach both simultaneously.

The new type is of entirely different construction, and two different colored nonmixing liquids are used instead of only one. In most cases, red oil and water are employed; but other heavier or lighter liquids may be used according to the pressures and flows to be dealt with. The design of the new tube resembles a W instead of a plain U. The two outer ends of the W terminate in bulbs having openings which are connected to the pipe line in the same way as the ends of the U-tube of an ordinary flow meter—on either side of the orifice disc of known size which produces the differential pressure corresponding to the rate of flow. From the middle point of the W a riser tube is connected. This riser tube is of a height proportionate to the line pressure to be measured and to the liquid used.

To operate the instrument the heavier liquid first is poured into each U-tube so as to occupy approximately one-half of the height of each. The lighter liquid then is poured into the riser tube (which is open to the atmosphere) so as to act as a seal. As this addition will make the levels of the heavier liquid in the U-tubes unequal, sufficient of the lighter liquid then is added at the bulb ends to counterbalance and correct this. The instrument then is installed on the pipe line.

TROUBLES OVERCOME BY "LOOSE WINDOW" GLASS

The Diamond high-pressure gauge glass, manufactured by the Diamond Power Specialty Co., Detroit, Mich., was designed to overcome the difficulty encountered in the use of flat glasses protected on the water side by mica, for pressures above 450 pounds, this difficulty lying in the fact that tightening the gauge body, or cover plate, against the glass in order to produce a water and steam tight joints sets up a strain that is likely to crack the glass. In the Diamond construction the glass is virtually loose, acting only as a support for the mica.

The mica clamped between the metal parts virtually forms what might be called a drum head, which drum head is backed up by the "loose window" glass, supporting the mica drum head against the steam pressure without the glass itself being subjected to the clamping pressure to which the mica is subjected. The glass is never under higher pressure than the steam pressure itself.

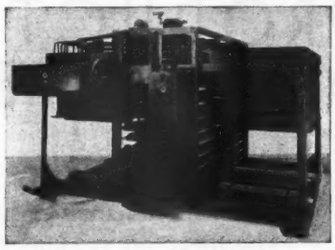
The "loose" glass insures against strains set up by the greater expansion and contraction of the steel body when temperature changes take place, which also permits the use of longer windows and consequently, greater length of vision is obtainable.

WESTINGHOUSE HAS MOTOR FOR DEEP HOLE DRILLING

By H. E. Dralle
Petroleum Engineer Westinghouse Electric & Manufacturing Co.

Only a few years ago drilling to depths of 7,000 feet commanded headline attention. Today completions at 8,500 feet are common. Depths of 9,000 feet arouse little comment and 10,000 feet is the next goal.

In drilling operations the item of paramount importance is that of keeping the bit rotating on bottom in order to complete a well in the shortest possible time. To accomplish this the time consuming operations of "coming out of" and "going in" the hole, must be minimized.



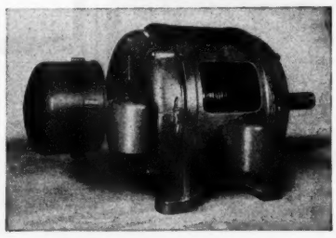
Oil-immersed magnetic control for single rotary drilling motor.

Greater depths necessarily mean greater weight of drillpipe and reduced time in handling. This combination of greater weight and faster hoisting speeds means constantly increasing strains upon all surface equipment. Motor horsepowers must be increased; brakes and hoisting mechanisms improved and enlarged; derricks and wire lines strengthened to meet these progressive developments in deep drilling.

The problem of providing suitable electrical equipment is not one of simply added horsepowers, but rather involves a combination of large horsepowers, high torques, quick starting and stopping, high thermal capacity, and sturdiness coupled with a means for easily obtaining any of these characteristics flexibly and readily. These characteristics are provided by a new alternating current equipment manufactured by the Westinghouse Electric & Manufacturing Co., and comprising a motor, control and reduction gear.

The motor is of the star-delta protected type, rated 125-250 horsepower, 900 r.p.m. The star side is used for drilling and the delta side for hoisting operations. This combination permits efficient performance since the torques and speeds are readily controlled on either connection for the various operations. The control is also of the protected, magnetic type, completely wired and assembled at the factory, and mounted on suitable skids to facilitate installation and handling in the field.

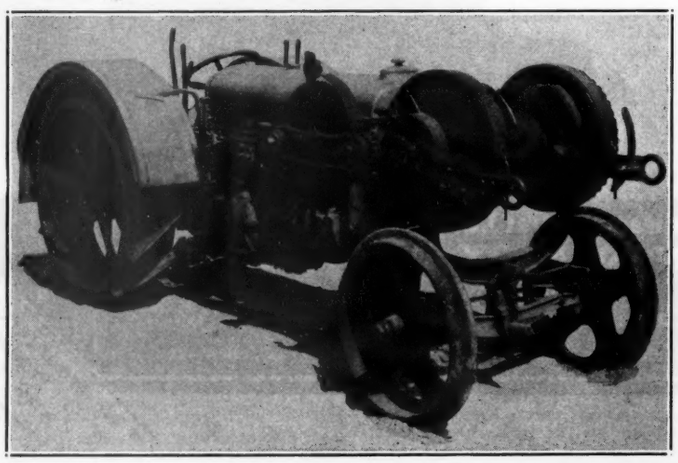
Operation of the control is obtained by means of a small master switch connected through telegraph cords to the control wheel on the draw works post. Push buttons for obtaining emergency stop or automatic change over from the star to the delta connection, and vice versa, are also mounted on the draw works post and are readily accessible to the driller. A tank-lifting device makes it easy for one man to lower or raise the oil tanks for inspection of the contactors.



Protected type rotary drilling motor 125/250 horsepower, capable of delivering momentary loads of 1,200 horsepower.

The large drilling motor is directly connected to, and mounted on a common bedplate with a single reduction gear which carries a sprocket for chain drive to the line shaft. This entire equipment (motor and gear) is also mounted on skids to facilitate handling.

IMPROVED W-K-M WINCH FOR NEW FORDSON TRACTOR



Announcement is made by the W-K-M Co., Inc., manufacturers of oil field, pipe line, and industrial equipment in Houston, Tex., that production has begun on a rod and tubing winch to be mounted on the new Fordson tractor. Until the old Fordson was taken off the market in 1928, W-K-M had a wide sale for the front-end winch which it built for that tractor. Officials of the company say many new features have been incorporated in the winch.

CACTIZONA OFFERED FOR REMOVING BOILER SCALE

A great cause of lowered efficiency and waste in the operation and care of steam boilers is solid elements in the water, all water containing them in some form. The more harmful consist of lime, magnesia, soda, iron and silica, in the form of chlorides, carbonates, sulphates and oxides. These destructive agents in the steam plant cause corrosion and the formation of scale. Boiler scale offers approximately 20 times more resistance to heat than iron does and about 5½ times as much as asbestos.

Cactizona, manufactured by the McAvoy Products Co., Chicago, and characterized as "nature's water treatment," is offered by that company as a protection against rust, corrosion. The preparation is said to prevent oxidation, the basic cause of corrosion and pitting. According to the manufacturers a boiler may be filled to the top with Cactizona-treated water and then left idle for an indefinite period without damage or deterioration.

By preventing oxidation, the manufacturers say, water treated with Cactizona precludes formation of rust and corrosion in the water jackets of Diesel and other types of internal combustion engines. Further damage is said to be stopped and incrustations previously formed are removed gradually from the jacket.

PEAK DEMANDS FOR GAS MET BY MIXING SYSTEM

The mixing of manufactured with natural gas is now an established practice, adopted as a practicable means of insuring satisfactory service to customers under all conditions throughout the year. In general, the problem has been to meet constantly growing winter peak demands in the face of increasingly inadequate supplies of gas. In some localities the available flow at the wells is insufficient during the cold months when the consumption is greatest. In other localities the winter peak requirements have grown beyond the capacities of the transmission mains.

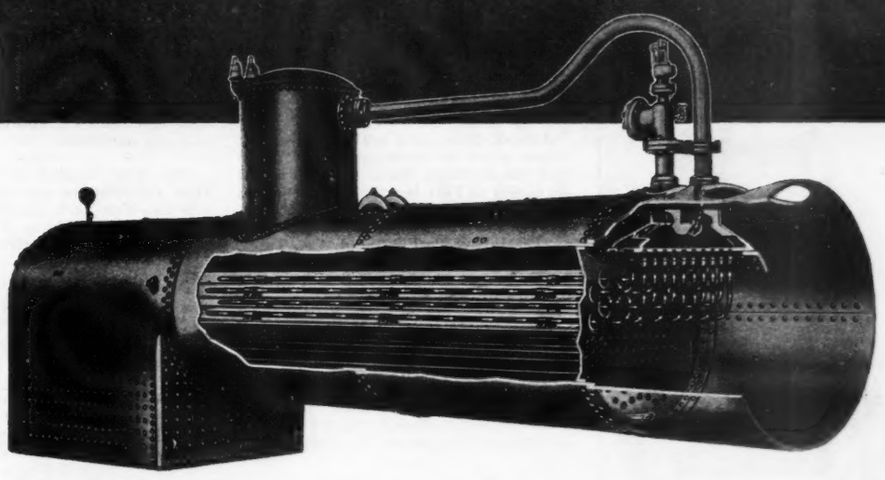
In the Dayton-Faber system, owned by the General Oil & Gas Corp., New York, oil gas is generated by the Dayton process and mixed with natural gas to supplement the available supply in winter or to meet emergency shortages at any time. When this auxiliary gas is not required natural gas is reformed to a lower heating value by the Faber process in the same apparatus. By mixing this reformed gas with straight natural gas a mixture is provided having the same characteristics as the mixed natural and oil gas. Thus it is possible to adopt heating value and specific gravity standards resulting in maximum burner efficiency in domestic appliances, and to maintain these standards at uniform values throughout the year.

The two operations of oil gas generation and natural gas reforming are quickly interchangeable. Either process can be started from cold and full capacity reached within an hour.

Each operation is continuous, requires no steam, solid fuel, or external heat, produces no lamp black, and is performed with unusually high conversion efficiencies and at extremely low conversion costs.

The William J. Sweet Foundry Co., Newark, N. J., announces that its revised Sweetaloy castings chart is ready for distribution. The chart covers the company's whole range of chrome iron and chrome nickel alloys for corrosion and heat resistance.

BRODERICK
SUPERHEATED BOILERS



The Key to SUPER POWER Equipment

STEAM, as soon as it is removed from contact with the water, flows inside tubular units from saturated steam headers to superheated steam headers. Hot gases around the tube elements change saturated steam to dry steam. As in railway locomotives, superheated steam is more efficient than saturated steam for turning heat energy into mechanical energy, and therefore, fuel into power.

Broderick Superheated Boilers Give These Added Advantages:

1. No increased size in a portable boiler to meet increased power requirements.
2. No steam traps required.
3. Higher steam velocity and flow to engine and pumps.
4. Rapid, dry, steam flow increases speed of engine and pumps.
5. Higher engine speeds without the danger of water from condensation.
6. Less water—less scale—less fuel for boilers.

Ask any National Supply man, or Broderick representative, for the record stories at Oklahoma City. Talk with the drillers who are now using Broderick superheated Boilers. For Bulletin giving record of tests and complete description of superheated equipment and boiler sizes, address

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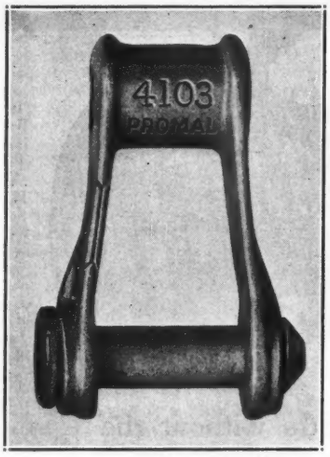
BRODERICK BOILERS
WITH
ELESCO SUPERHEATERS

EQUIPMENT AND SUPPLIES

LINK-BELT INTRODUCES NEW METAL FOR CHAINS

A new line of cast chains showing unusual strength and durability has been placed on the market by the Link-Belt Co., Indianapolis, Ind. These chains, sold under the registered trade name of Promal, are the result of extended re-



search to provide longer life for drive and conveyor chains operating under heavy loads or abrasive conditions. Experimentation with cast chain metals, started about four years ago, led to the discovery of a new method of processing malleable iron which so altered its physical characteristics as to make it a distinctly new metal. This fact was recognized by giving it the distinctive name of Promal.

Promal has to a high degree the qualities desirable in sprocket-chain material, great toughness to resist extreme tension without permanent stretch, high strength in proportion to weight and size, and hardness that affords great resistance to abrasive wear. The combination of these characteristics in the new metal gives chains made of it their surprising durability.

Owing to their high Brinell hardness, Promal chains withstand abrasive wear to an extraordinary degree. Promal has an exceptionally high yield point or elastic limit which engineers recognize as of greater importance than ultimate strength. In addition to having this high yield point Promal metal is tough and ductile so that it withstands shock and fatigue loads. High temperature reduces its tensile properties somewhat, but temperatures up to 1,000° F. will not cause it to become brittle.

Although laboratory tests indicated the remarkable wearing qualities of Promal chains when they were first developed, they were withheld from the open market for over three years to permit extensive field tests. The results are said to have confirmed the laboratory tests. Details of the physical properties of Promal, and other information regarding Promal chains may be obtained from the Link-Belt Co. by asking for Book No. 950.

SALES CONTROL TRANSFERRED

Sales control of the Allis-Chalmers Model U industrial tractor has been transferred to the company's Monarch Tractors division in Springfield, Ill., according to H. C. Merritt, general manager of the tractor division. R. W. Gotshall, Springfield works sales manager and W. Ellzey Brown will have charge of the new industrial line.

BUSINESS NOTES

J. U. Sammis, of Chicago, has joined the Southern States Co., Shreveport, La., which is in the business of tubing wells in high pressure areas.

The Chicago district office of the Ross Heater & Manufacturing Co., Buffalo, N. Y., has been moved to 20 North Wacker Drive. S. Wolff is district manager and R. E. Allen, sales engineer.

John S. Ross, who left the Bureau of Mines office in Shreveport, La., to go with the Southern States Co., has moved his family to Fort Worth, Tex., where his headquarters will be.

The Murray Tool & Supply Co., Tulsa, has purchased a Cessna cabin monoplane for the transaction of company business, service calls and emergency trips.

The Fields Chemical Co., Los Angeles, Calif., has been incorporated to utilize the Fields process, which it owns, in the manufacture of synthetic gasoline from refinery bottoms, low grade oils, and waste organic materials. John D. Fields, inventor of the process, is president.

H. K. Warren, sales engineer of Lucey Products Corp., with headquarters in Oklahoma City, Okla., is in Southwest Texas making study of that territory for his company.

The Beaumont Cement Sales Co., Beaumont, Tex., has been granted rights by Corona Silica, Inc., Rogers, Ark., for distribution of Opalite in the Gulf Coast territory. Warehouse stocks have been established in Houston, Barbers Hill, Beaumont, Hackberry and New Orleans.

TRADE LITERATURE RECEIVED

A leaflet describing Sterling Clover-leaf sections for vapor tower knock-back coils has been issued by the American Radiator Co.

The Buckeye Traction Ditcher Co., Findlay, Ohio, has prepared an interesting catalog in colors showing how Buckeye ditchers meet oil and gas field requirements. Various models are shown, with specifications, and construction details are explained.

The July number of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York, contains two articles relating to the problem of laying natural gas lines across wide rivers.

The Cameron Iron Works, Houston, Tex., has issued a new book on its tubing control heads, containing instructions for the operation of the heads and details of their construction.

A leaflet directing attention to the fact that samples from three levels can be taken in one operation with the Hills-McCanna liquid samplers is being sent out by the Hills-McCanna Co., Chicago.

"Scientific Water Correction" is the title of a booklet prepared by the Dearborn Chemical Co., Chicago. The whole subject of scale, corrosion and other water troubles is discussed.

"Taking Evaporation Losses Out of Oil Storage Costs" is an interesting article by C. L. Day in the July number of "The Water Tower," published by the Chicago Bridge & Iron Works and the Horton Steel Works, Ltd., Chicago.

NEW "CATERPILLAR" GRADER HAS LEANING WHEELS

A new grader to team up with the "Caterpillar" Sixty tractor, featuring a 42-inch lateral side shift of blade that can cut a bank of 60-degree slope, is announced by the Caterpillar Tractor Co. This grader, besides introducing new features of blade control, reach and range, has also the feature of leaning wheels.

The new "Caterpillar" Sixty Leaning Wheel grader is the heaviest of the "Caterpillar" blade graders, weighing 11,300 pounds without scarifier, and introduces a new centralized control system by which seven control wheels govern the nine important adjustments of blade pitch and position, wheel adjustment and steering.

Correct pitch of blade at all times, whether cutting or drifting, is maintained by the exclusive "Caterpillar" feature of three-point control. The wide range and reach of blade are made possible by a 42-inch lateral side shift, by three positions of the connecting link between side shift and circle crossbar, by three blade position connections with the blade beams and by four positions at the extensible lifting links. The blade thus is enabled to make a high reach for bank cutting of 6 feet, 6 inches and can cut a slope of 60 degrees.

The entire lifting mechanism is mounted on roller bearings—tapered roller bearings in worm shaft, double row ball bearings on the lift shaft and roller bearings for the compensating lift spring sheaves.

A new construction is also introduced for the knuckle arms of the leaning wheels whereby a steel sleeve through the knuckle holds the heavy steel pin. The sleeve also acts as a spacer for the axle angles, allowing the nut on the pin to be drawn tightly up to maintain rigidity. The knuckles pivot on the sleeve, not on the pin.

TUBING PROTECTOR NOW OFFERED BY BAASH-ROSS

After a year of research in co-operation with major California oil companies, a casing and tubing protector in which a smooth bronze sleeve forms the contact between coupling or tubing and casing has been placed on the market by the Baash-Ross Tool Co., Los Angeles, Calif. In one type the bronze protector is applied to the standard A.P.I. coupling with a press fit, without altering the coupling in any way. In the other type, for application to wearing points on the tubing itself, a split steel grip ring which slips over the tubing is provided with a male, and the bronze protector with a female thread. Tightening the two together by means of a spanner wrench holds the protector rigidly in place.

Baash-Ross tubing-casing protector on standard A.P.I. coupling.

In wells where they have been tested, these protectors have now been running more than 300 days, and are good for much longer service. Introduction of the bronze protector has the same effect of prolonging equipment life and reducing friction as the bronze journal box bearing in general use.

The Baash-Ross protector is simple and there is nothing to come loose and drop in the hole. The protectors can be furnished complete, or applied to couplings furnished by the purchaser.

INSTRUMENT MEASURES LOWER GAS PRESSURES

The new model 252 Brown manometer, manufactured by the Brown Instrument Co., Philadelphia, Pa., is designed for measuring flows of gas or air where the pressure does not exceed 50 pounds per square inch.

This manometer is not of the usual U tube type. A steel bell floats in a well of mercury, the whole being enclosed in a pressure tight casing. The high-pressure orifice tap connects to the under side of this bell. The low-pressure orifice tap connects to the outside of the bell. There is a seal of mercury between the high and low-pressure chambers.

The differential pressure causes the floating bell to rise, but this movement is resisted by the loss of buoyancy of the steel bell as it emerges from the mercury in which it floats. Thus the travel of the bell is proportional to the differential pressure. By changing the bell the range of the meter can be changed. To the top of the bell is attached an armature within a pressure tight tube around which there is a divided inductance coil.

This electrical transmitting system is identical with the system used on the Brown company's Model 253.

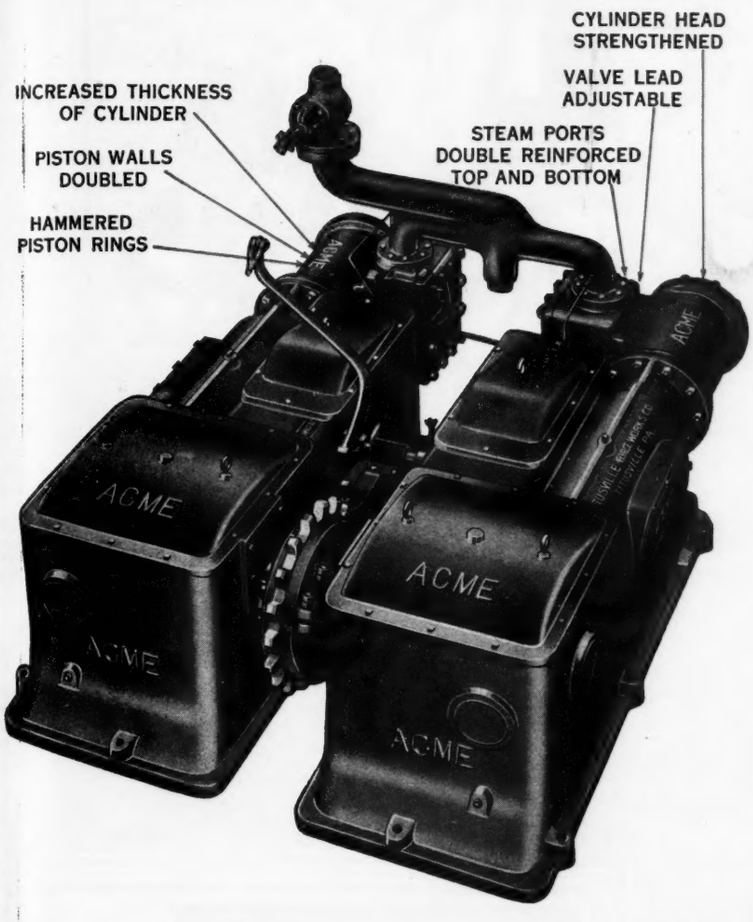
HERCULES ENGINES IN JAPAN

In the Orient, as well as in America, Hercules engines are entering new fields. Manufacturers of heavy-duty industrial and automotive equipment in Japan are customers of the Hercules Motors Corp., Canton, Ohio. The Kato Works in Tokio is among Japanese manufacturing concerns which have adopted Hercules engines. This company builds a line of gasoline locomotives and equips several models with heavy-duty Hercules engines. K. Hattori & Co., Ltd., of Tokio, is the exclusive distributor for Hercules products in Japan.

"New Acme"

ROLLER BEARING 12" x 12" TWIN ENGINE

FOR STEAM PRESSURES UP TO 350 LBS.



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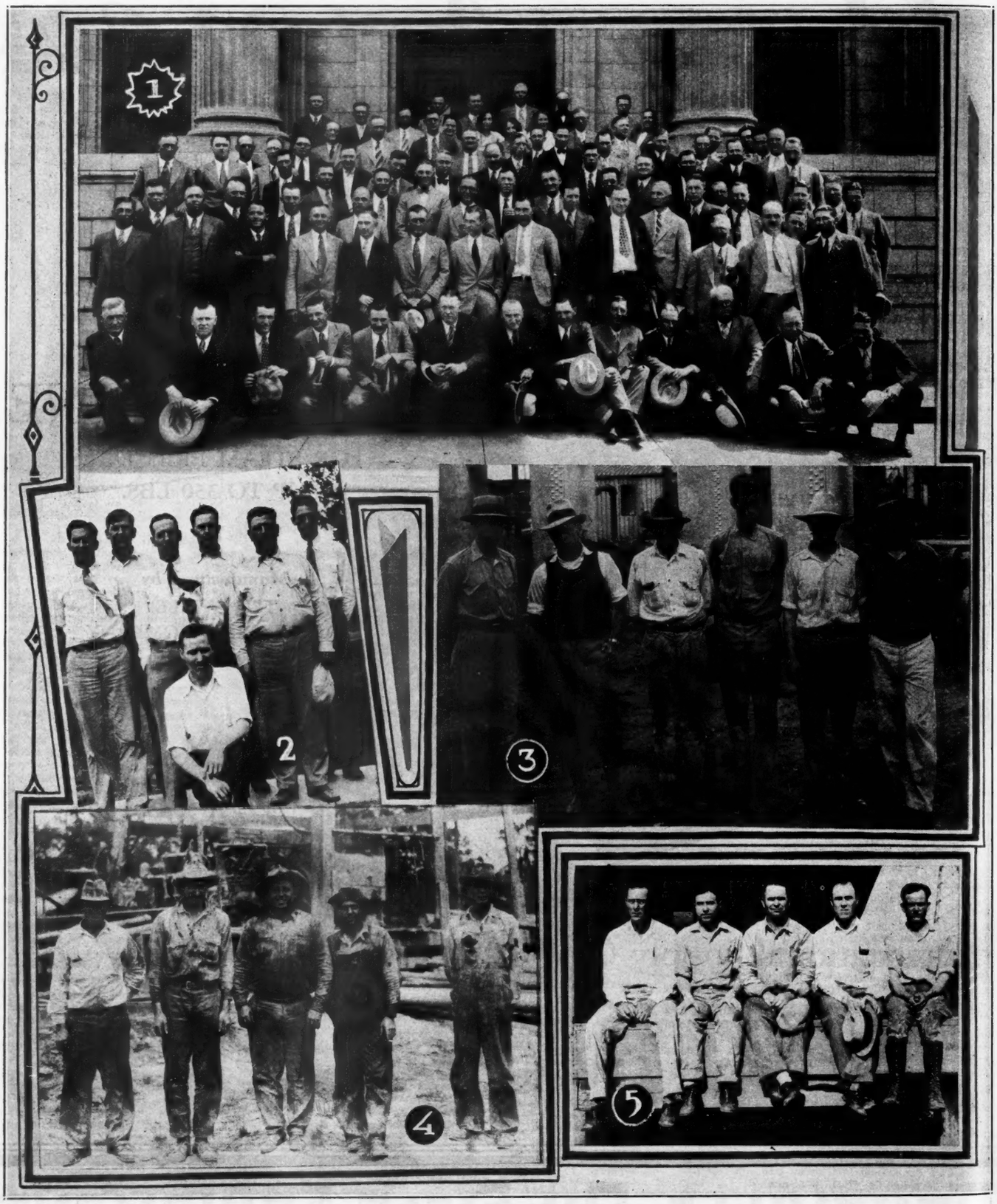
TIW-48

TITUSVILLE OIL FIELD EQUIPMENT

GAS ENGINES ▲ PUMPS ▲ BOILERS ▲ DRILLING RIGS ▲ STEAM ENGINES

Group Photographs Taken in Oil Centers



(1) Foreman and storekeepers, Lone Star Gas Co. The three women in the picture are in the operating department of the company at Dallas. (2) Back row—J. V. Spillman, U. S. Cowan and C. W. Allen. Middle row—J. H. Wogan, C. B. Thompson, office manager, and L. H. Griffith. Front row—D. R. Newlin, Comar Oil Company, Tonkawa, Okla. (3) Left to right—Oscar Harned, superintendent, Superior Oil Corp. gasoline plant; P. R. Harned, Earlsboro, Okla.; B. E. Queen, foreman of construction; D. O. Tomlinson, stillman; F. B. Rogers, oiler, and H. E. Grimes, engineer. (4) I. S. DeSota, driller; J. T. Adams, T. J. Berry, A. A. Rambin and J. A. Hesser, who brought in discovery well in the new Holly district, DeSoto Parish, Louisiana.' (5) Pete Elmore, G. W. Lynch, P. D. Liles, L. Ulmer and T. W. Clark, farm warehouse group, Comar Oil Co., Tonkawa, Okla.

IDEAL

DRAW WORKS

GROOVED DRUMS

For Use On

IDEAL Draw Works

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7½-24, 8SD, 12SD.

Descriptive Bulletin

No. 94

Sent on Request

THE

NATIONAL SUPPLY

COMPANIES

MEN KNOWN IN OILDOM

James R. Gahan

James R. Gahan, of Fort Worth, Tex., recently made vice president and director of the Tidal Oil Company, was born in Bradford, Pa., November 5, 1887. His parents moved to Titusville, Pa., the following year and in the course of time James attended Titusville schools and later graduated from Allegheny College, in Meadville, Pa., in 1910. He studied law and was admitted to the bar in 1913 and practiced law in Titusville, but gave up his practice to enter the service of the United States in the World War. In June, 1920, he joined the Tide Water Oil Company and went to Tampico, Mexico, as attorney for the Tide-Mex, Mexican subsidiary of the Tide Water Oil Company. He was made general manager of the Tide-Mex in May, 1922.

Mr. Gahan joined the Tidal Oil Company at Fort Worth in December, 1923, and was in the legal department until January 1, 1927, when he was made head of the land department. On January 1, 1929, he was made manager of the Texas division of the Tidal Oil Company. He was promoted to his present position on July 3, 1930.

Mr. Gahan was married to Dixie M. Thrasher in Fort Worth on July 26, 1924.

PERSONAL PARAGRAPHS

Max B. Miller, of Max B. Miller & Company, Inc., New York, was in St. Louis, Mo., last week.

* * *

Dr. Edward Bloesch, consulting geologist, has just returned to Tulsa from a trip to the West Texas oil fields.

* * *

Virgil O. Wood, geologist of Tulsa, accompanied by his family, is now at Laguna Beach, Calif., for a vacation.

* * *

H. J. Morlang, vice president of the Oil Well Supply Company, spent the week of July 7 in the Houston and South Texas district.

* * *

Howard Felt, secretary of the Warren Petroleum Company, Tulsa, is enjoying a month's vacation in Pennsylvania and other eastern points.

* * *

Don Wallace, safety director of the Mid-Continent Oil & Gas Association, has returned from a few weeks spent in and around Mobile, Ala.

* * *

Miss A. C. Currens, secretary to J. M. Holliday of the Transcontinental Oil Company, Tulsa, spent a few days in Fort Worth, Tex., during the past week.

J. E. Rouse of the Standard Oil Company of Indiana at Casper, Wyo., has returned from a trip to Denver. He was accompanied by Mrs. Rouse.

* * *

G. V. Witwell, a geologist, with the Carter Oil Company, has been transferred to Jackson, Miss., where the company plans reconnoissance work.

* * *

H. J. Scott, general manager of sales, and George Homer of the Transcontinental Oil Company, Tulsa, are making a business trip to Fort Worth, Tex.

* * *

W. A. Tabor has recently been made branch manager for the Wertzberger Derrick Company for the Seminole area with headquarters at Shawnee, Okla.

* * *

H. C. Denning, of Lusk, Wyo., is moving in material for a test on the Old Woman Creek anticline, north of Lance Creek oil field, eastern Wyoming.

* * *

C. C. Herndon, vice president of the Skelly Oil Company, who has been spending some time with his family in the Adirondacks, has returned to Tulsa.

* * *

James F. Brown has returned to Canada after five years in the Borneo oil fields. He will spend some time at Sarnia, Ontario, before returning to Borneo.

* * *

W. E. Purdue and family are taking an automobile trip to the western and northwestern states. Mr. Purdue is of the firm of Winker & Koch, Wichita, Kans.

* * *

W. E. Holmes, oil producer and contractor of Tulsa, with family, is now in Beverly Hills, Calif., on a vacation. Mr. Holmes expects to stay in California 60 days.

* * *

Marshall Sterling, of the oil industry division offices of the Philip Carey Company, Dallas, Tex., has been in Tulsa meeting former friends and business acquaintances.

* * *

Frank Redick, master mechanic for the Mid-Kansas Oil & Gas Company in the Yates Pool, Texas, has just completed a three-weeks automobile tour to his old home in Ohio.

* * *

T. F. Cole, treasurer of the J. A. Hull Company, Tulsa, is spending his vacation in northern Minnesota searching for muskies and great northern pike in the vicinity of Bemedji.

* * *

W. C. Adams, chief geologist with the Deep Rock Oil & Refining Company in Tulsa, was injured in an automobile accident in Colorado. He expects to return to Tulsa in two weeks.

* * *

Ron Way, of the engineering department of the Parkersburg Rig & Reel Company, has returned to Parkersburg, W. Va., after spending several weeks in a field survey in Oklahoma.

* * *

E. O. Bacon, formerly chief scout of the Shell Petroleum Corporation in Tulsa, is now located in Houston, Tex. Mr. Bacon will be in charge of the crude oil purchasing department.

* * *

Chester L. Kaup of the accounting department of the Midwest Refining Company, and Mrs. Kaup have returned after a trip to Canada, New York, Philadelphia and Washington, D. C.

* * *

L. V. Surtees, northern division manager of the sales department of the Mid-Continent Petroleum Corporation, is now in charge of the western division and is located at Lincoln, Neb.

* * *

A. R. Dennison, district geologist for the Amerada Petroleum Corporation, and Mrs. Dennison, are spending a two weeks' vacation touring the western states, and visiting the national parks.

* * *

Warren F. Bleecher, consulting engineer for the Zero Hour Bomb Company, has returned to his home in Boulder, Colo., after spending about a month at the Tulsa office of his company.

* * *

K. J. Smith, superintendent of the Skelly refinery at Eldorado, Kans., is spending his vacation sightseeing along the western coast, visiting points of interest, especially in Washington and Oregon.

John T. Hayward, engineer in the production department of the Shell Petroleum Corporation, Tulsa, is now in Kansas on company business. He is making his headquarters at Wichita while away from Tulsa.

* * *

Hugh McClellan, of Burke-Greis Oil Company, Tulsa, read a paper on "Distribution of Pre-Mississippi Formations in Kansas," at the monthly meeting of the Kansas Geological Society in Wichita, Kans.

* * *

Clyde Gibson of Aruba, Dutch West Indies, associated with the Pan American Petroleum & Transport Company, is visiting with his family in Casper, Wyo., where Mr. Gibson was formerly associated with the Standard Oil Company of Indiana.

* * *

Fred Koch, of Winkler & Koch, petroleum engineers and designers of refining equipment, has left Wichita, Kans., to inspect installations this firm is making in Russia. Fifteen units in widely separated parts of Russia are now under construction.

* * *

Charles Hitt, land man for the Transcontinental Oil Company, San Angelo, Tex., is doing some work in the company's district office at Fort Worth, Tex. He recently came up from San Antonio, where the company has been buying considerable acreage.

* * *

Dr. Joseph B. Umpleby and family, of Oklahoma City, Okla., are spending their vacation cruising in the waters of Puget Sound, Washington, in a new boat Doctor Umpleby has recently acquired. They are making their home in Seattle, Wash., during this visit.

* * *

Hale B. Soyster, supervisor of the mineral leasing division of the United States Geological Survey, has returned to Casper, Wyo., after an inspection trip through Colorado, New Mexico and Arizona. He met his family in Salt Lake and they returned with him.

* * *

E. J. Compton, of San Angelo, Tex., in charge of surface leasing of University of Texas lands, and Mrs. Compton, and Mr. and Mrs. Stearns of Santa Rita, are touring Colorado and Wyoming on a two weeks' vacation. Mr. Stearns is with the Texon Oil & Land Company.

* * *

Henry M. Gray, with the legal department of the Mid-Continent Oil Company, Tulsa, accompanied by Mrs. Gray, left on July 12 for a six weeks' tour of Europe and will sail from Quebec, Canada, on July 15. Their trip will take them through England, Holland, Germany and France.

* * *

Dr. H. N. Bybee, geologist and mineralogist for the board for the lease of University of Texas lands, and J. N. Gregory, an assistant, of San Angelo, are now studying the central mineral region which comprises all or parts of San Saba, Llano, Burnett, Blanco, Gillespie, Mason and McCulloch Counties, Texas.

* * *

Scott Turner, director of the United States Bureau of Mines, has been appointed by the board of directors of the American Institute of Mining and Metallurgical Engineers to represent the Institute at the annual meeting of the Institution of Mining Engineers to be held at Birmingham, England, this month.

* * *

R. B. Hall, manager oil industry division of the Philip Carey Company, Dallas, Tex., recently spent several days in Oklahoma calling on his many friends and customers with R. T. (Mack) MacEachern, Tulsa district salesman. To save time and keep closer contact with division offices at Dallas, Mr. Hall makes frequent use of planes out of Tulsa and Dallas.

* * *

J. H. Jenkins, vice president in charge of production of the Associated Oil Company, San Francisco, Calif.; E. H. Salrin, president of the Tidal Oil Company, New York City; R. B. Pringle, general manager of the Tidal Oil Company, R. A. Bonnell, manager of production, Tulsa, have concluded a trip to Fort Worth, Tex., from where they flew to Hobbs, N. Mex., to look over the Tidal Oil Companie's properties and the big well the company just completed in the field.

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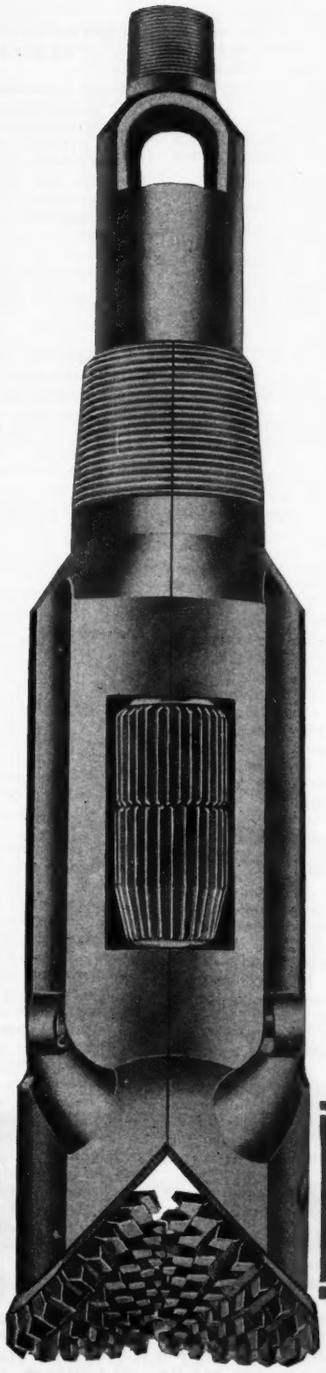

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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

STRAIGHTRUN AND CRACKED GASOLINE PRODUCTION AND DEMAND

What is the ratio or percentage of straightrun and cracked gasoline made to the total quantity? How much difference is there between total supply and demand? Which is considered the better of these two gasolines and why?—G. H. B.

The total daily gasoline output of the 363 operating refineries in the United States, as of January 1, 1930, was obtained from 3,723,360 bbls. of crude oil, capacity, and 187 plants operating cracking units with a daily capacity of 1,707,299 bbls. of cracking stock. The total demand for gasoline, according to Government figures, discussed by C. O. Willson in The Oil and Gas Journal, June 19, 1930, page 39, the first four months of this year totaled 139,904,000 bbls. This was an increase of 15,688,000 bbls. over the same period for 1929; the domestic demand increased 10.8 per cent and export demand 23.3 per cent.

The total supply was 151,207,000 bbls. for the four months; of this quantity 77,686,000 bbls. were straightrun from crude oil, 51,894,000 bbls. were cracked gasoline from gas oil and fuel oil. The remainder of the supply includes natural, imports and benzol. While the production of gasoline increased 10,378,000 bbls. over 1929 at the same time there was a decrease of 1,337,000 bbls. of straightrun and an increase of 9,811,000 bbls. of cracked gasoline. Natural gasoline increased 1,922,000 bbls. and benzol fell from 1,002,000 bbls. to 984,000 bbls.

It is not expected that the demand for gasoline will continue in the same proportion as outlined in these figures but there are several reasons why the percentage of cracked gasoline over straightrun will increase. The stocks for cracking are cheap and the manufacture of cracked gasoline can be accomplished at less cost than for straightrun. The increasing importance and demand for high antiknock motor fuel will tend to cause enlargement of cracking facilities because of the increased value of the product with respect to knock rating. Mr. Willson states: "The trend in marketing is toward gasoline with higher and higher benzol equivalents, the best grades usually commanding a premium. Due to this condition a cracked gasoline at a refinery is often worth from one-fourth to 1 cent a gallon over a straightrun gasoline skimmed from a crude oil which also furnishes the charging stock for the cracking operation. This situation has become so important that many refiners are faced with the problem of disposing of their straightrun gasoline, a few refiners have reduced their purchases of high gravity crude in favor of the lower grades with their smaller yields of direct gasoline and larger yields of fuel oil and gas oil for cracking stock. It has been predicted that this shift in relative values will become so important in time that it will mean that the posted crude oil prices will no longer be based on gravity but will take into consideration the characteristics of the crude which have a direct bearing on the quantity and quality of gasoline obtainable with a high knock rating."

DISTILLATION TEMPERATURES OF GASOLINE

One of the most important items related to the selection of gasoline for automobile fuel should be careful investigation of the fractional distillation temperatures. Will you furnish details of specifications for the gasoline best suited to the automobile engine?—I. A.

During the past 10 years there has been a serious effort to prepare specifications for the ideal motor fuel. Extensive investigations have been made by numerous authorities, and especially by the United States Bureau of Mines and the Bureau of Standards, that have resulted in what are known as federal specifications. These have been published as Technical Paper 323B, Bureau of Mines, United States Government Master specification for Lubricants and Liquid Fuels. This was published in revised form October 21, 1927. The specification for U. S. Motor gasoline was revised September 11, 1929, and another revision is under consideration at this time. This statement is made to indicate that the best authorities have difficulty in determining just what a gasoline should be when intended for motor fuel; the greatest uncertainty apparently centering about the distilling properties.

Former standards have based specific distilling percentages on the quantity recovered but the proposed specifications make use of percentages evaporated. The current specification for U. S. Motor fuel includes the following under Distillation Range—When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 80° C. (176° F.), nor less than 50° C. (122° F.); provided that for each per cent distillation loss less than 4 per cent, obtained in the A.S.T.M. distillation, the minimum 10 per cent temperature requirements shall be lowered 3° C. (5.4° F.).

When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 140° C. (284° F.).

When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 200° C. (392° F.).

The endpoint shall not be higher than 225° C. (437° F.).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

Much attention is being given to the lower, or more volatile, part of the distillation, because of the tendency of the very volatile portions of the fuel to cause vapor lock when the motor is running. The 10 and 20 per cent portions are thought to indicate the temperature where vapor lock will take place. There can be no questioning of the fact that the temperature under the hood will exceed 122° F. during the summer months and it seems that the automobile designer has not given this fact the consideration that is required. The fuel system should be placed so that it will be kept comparatively cool. The volatile portions of gasoline are valuable and desirable so it should not be necessary to waste them in order to reduce the vapor lock tendency. The suggestion has been made that the vapor lock problem is something that the manufacturer of the automobile should solve and not require the refiner to modify the gasoline; in fact a large number of automobiles do operate without this trouble.

While the present specification for U. S. Motor gasoline is an all year specification there are many refiners who modify their gasoline to meet seasonal requirements. That is, the lighter material may be decreased during the summer season and increased as the colder months approach because of the demand for a fuel that will give easy starting at low temperatures.

References pertaining to fractional distillation may be found in—Distillation Principles and Processes, by Sydney Young, Macmillan Co., London. The Analytical Distillation of Petroleum, by E. W. Dean, H. H. Hill, N. A. C. Smith, W. A. Jacobs, United States Bureau of Mines Bulletin 207, 1922. Four Point Control Method, by H. C. Vesper, Ind. Eng. Chem., Vol. 18, 64; 1926.

BENZOL FROM NATURAL GAS

The raw material for benzol is almost entirely coal, from which it is obtained as a by-product when coal is converted to coke. The larger part of natural gas is methane, which can be changed to acetylene and this in turn to benzol; according to the chemists. If these experimental facts have been confirmed, why should we not look to natural gas as a reliable source of benzol?—A. C. M.

Acetylene may be formed from methane by simply passing the gas through a red-hot tube, in other words, by incomplete combustion. After the acetylene has been produced it may be converted to benzol by a similar process of heating without the presence of air. These are facts that have been known for many years and are considered of great importance. Within recent years such conversions have been applied on a large scale in connection with studies of artificial gas.

The Petroleum Times, April 31, 1929, abstracted an article from Brennstoff-Chemie, July 15, 1929, from which the material following has been taken.

The conversion of acetylene into benzol is a thermal operation requiring temperatures 932° to 1,292° F. R. Meyer found that a conversion of 35 per cent was obtained by passing acetylene through porcelain tubes heated to the mentioned temperatures. Zelinsky demonstrated that when activated charcoal was used as a catalyst under a temperature of 1,184° F., up to 70 per cent of the acetylene could be changed into a tar oil of which 35 per cent was benzol. While this work was done with pure acetylene others have demonstrated that comparable yields could be obtained from gas mixtures.

The conversion of acetylene to benzol, requiring three molecular weights of acetylene to form one of benzol, is a polymerization reaction accompanied by volume contraction resulting in a change of pressure and of the equilibrium points. One significant fact was noted in these experiments; at the beginning the products leaving the tube were chiefly hydrogen and methane, and only after some carbon was deposited with the catalyst was the acetylene converted into oil products. After continuous operation for about 10 days the conversion begins to fall off. Heating is at 68° F. higher temperature temporarily restores the rate of conversion. It was thought that a slight oxidation might regenerate activity of the contact material and 10 per cent carbon dioxide was added. This restored activity, which continued for a long time after the addition of carbon dioxide was stopped. When the activity was again slow, another addition of carbon dioxide again accelerated the reaction. The carbon dioxide passes through practically without loss.

See answer to T. L. this page issue of July 10, 1930.

PRODUCTS OR PREPARATIONS FROM PETROLEUM

What household, medicinal or industrial preparations are being made from gasoline and oil refinery by-products; for what purpose are these preparations used; through what channels are they distributed, and which preparations seem most promising based on potential volume, competitive advantages, profit, etc.?—R. B.

An adequate answer to this question would require several large volumes. If the products of petroleum were suddenly removed from commerce all industries would come to a stop with much inconvenience in the home. The world's business would cease, there would be no illumination in many parts of the world, the preservation and preparation of food would be made difficult. Most machinery would become inoperative, trains could not move, there would be no automobiles on the roads nor airships in the air; we would have to guess the time of day, or return to the sundial, because our time pieces would not run. All of this due to the lack of oil for lubrication, gasoline for motor power, kerosene for light and heat, fuel oil for the development of steam and electricity. Certain animal and vegetable oils and other substances may be used for some lubricating purposes, but there are a vast number of lubricating services for which no substitute that will replace mineral lubricating oil is known.

Natural gas and refinery gas is a valued fuel that is frequently piped hundreds of miles for consumption. Parts of this gas are being extracted and concentrated in the liquid form. Such fractions have a high heating value so that when bottled in cylinders they may be conveniently distributed to sections far from the gas lines.

Gasoline and kerosene are the most valuable of petroleum products because of the large volume, over 50 per cent of the crude oil being converted into gasoline and kerosene, and the use as motor fuel, heating, lighting, cleaning, leather industry and numerous preparations. Next in importance comes the numerous grades of lubricating oils required for the most delicate instrument or ponderous machinery. Then there are the other products, all very important, such as wax, grease, gas oil, fuel oil, asphalt and coke.

Petrolatum and white oil are extensively used in medical practice. White oil, or medicinal oil, has been quite generally accepted by the medical profession as a mild evacuant because of its high degree of purity, freedom from odor and taste, and especially because its action is wholly physical. White oil is used as a sterilizing bath for surgical instruments because it does not act on any metal and does not permit bacterial growth.

Petroleum products are distributed by oil companies, jobbers and dealers. The fuel oils and coke through fuel dealers. The medicinal products are handled by jobbers and dealers.

We have no information covering the other points raised in the question.

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Natural Gas Developments

WYOMING COMMISSION ORDERS NEW GAS RATES

CASPER, Wyo., July 12.—Two schedules of rates for natural gas service in Cheyenne will be in effect simultaneously, one for gas from the Wellington-Fort Collins Field in Colorado and the other for gas from the Amarillo, Tex., Field, when the latter is used in excess of 5 per cent of the total quantity of gas required for sale, according to a recent order of the Wyoming public service commission.

The Wellington gas field, 28 miles from Cheyenne, is rapidly being depleted, and this will necessitate bringing gas from the Texas field, 455 miles away, at a cost to the company of 42 cents per 1,000 feet compared to 34 cents paid for the Wellington gas.

The company proposed to continue the present rates for gas from the Wellington Field and to establish a new and higher schedule for gas used from the Texas field in excess of 5 per cent.

The rates for Wellington gas are 45 cents per 1,000 feet for the first 5,000 feet per month, ranging down to 25 cents per 1,000 for all in excess of 50,000 and in addition a customer charge of 75 cents a month. This schedule, it was stated, results in a monthly charge to a customer using 10,000 feet per month of $6.87, equivalent to 68.7 cents per 1,000 feet.

The company proposed to charge for Texas gas a minimum of $1.35 for the first 400 feet used per month, 15 cents per 100 feet for the next 600, ranging down to 5.2 cents per hundred for all gas in excess of 10,000 feet per month. This schedule, the commission said, would result in a charge of $8.40 per month, or 84 cents per 1,000 feet, for a customer using 10,000 feet.

"The foregoing new proposal," the order said, "provides that as long as gas is available from the Wellington Field it will be used, but as such gas becomes depleted Texas gas will be used to supplement the loss of Wellington gas, and that the foregoing two rates will apply in proportion to the amounts of the two gases used. That is to say, if, for example, 70 per cent of Wellington gas is used and 30 per cent of Texas gas is used, the 70 per cent will be billed at the rate first mentioned—the present rate—and the 30 per cent at the second mentioned applied for rates; when all Texas gas is used, the second rate is to be applied exclusively."

An additional proposal was presented, the order said, providing for a lower rate for seasonal and nonseasonal industrial use in excess of 100,000 feet per month under special contracts.

Discussing the prices of gas at the field and at town borders, the order said:

"The evidence shows that the reasonable cost of gas delivered through the pipe line from the Texas field by the Colorado-Interstate Gas Co. and the Canadian River Gas Co. to the distributing company for Denver, at the town border, is 40 cents per 1,000 feet; that at that point gas is sold to the pipe line company for 17 cents (not 40 cents) which it, in turn, sells to the distributing companies in the various towns in northern Colorado and Cheyenne, and that for conducting the gas to the various towns in northern Colorado the pipe line company charges the distributing companies in those towns 40 cents, the same as the town border charge for Denver, and charges the distributing company at Cheyenne border point—the applicant—42 cents, only 2 cents more than the Denver distributing company pays, although the gas is conducted 115 miles farther than it is conducted to Denver. Said 17 cents paid by the pipe line company is 7 cents more than the Wellington gas costs the company and is conveyed 87 miles longer distance than is the Wellington gas.

"The pipe line from Denver to Fort Collins was alleged to have cost $687,000; the line from Fort Collins to Cheyenne was alleged to be of the value of $400,000. The reason for Cheyenne having only a 2-cent higher charge than Denver, as explained in the evidence, is the large amount of gas utilized in the towns between Denver and Cheyenne, enabling the main line from Texas to Denver to utilize more nearly the capacity of its pipe line; thus the unit cost of transportation is reduced. Otherwise, the cost of gas to the Cheyenne user, when the Wellington Field becomes wholly depleted, would be prohibitive.

"The pipe line company contracts with each of the Colorado towns are identical and the same as the contract with the applicant except for the 2-cent differential. It would, therefore, appear that Cheyenne has not been discriminated against."

The commission fixed the present value of the company's property used and useful in the distribution and sale of natural gas, as a rate-making base, at $343,029.

The rates proposed by the company were held to be too high and the commission authorized a schedule for Texas gas, when more than 5 per cent is used, of $1.25 as a minimum monthly charge, which shall include 400 feet of gas; 12 cents per 100 feet for the next 600, scaled down to 5.5 cents per 100 for gas in excess of 10,000 feet used in one month, with lower rates for large consumers, the charge being 3.5 cents per 100 feet for gas used in excess of 180,000 feet.

The commission also abolished the company's 10 per cent penalty charge for failure to pay bills promptly and provided for a penalty of 3 per cent if a bill is not paid by the fifteenth of the month.

The "unfortunate condition" that precludes State control of an interstate natural gas pipe line company "can only be rectified through congressional legislation," the commission says. The Wyoming statute, in defining a public utility, provides that the term shall include the manufacture, distribution or sale of gas to or for the public, whereas in the case under consideration the transportation of gas from Texas to Wyoming by the pipe line company is "not for distribution by it to the public but for sale to one customer, the applicant."

"The pipe line company does not sell or offer to sell gas to the public," the order stated; "it does not deal with the public and as its business is interstate, and not intrastate, it is not, under the provisions of said Section 5.453, a public utility subject to the jurisdiction of this commission."

ONTARIO GAS EXTENSION

CHATHAM, Ontario, July 12.—Union Natural Gas Co. has completed its pipe line extension from Oil City to Inwood, in Lambton County, and is delivering gas to Inwood. The line is being further extended to Alvinston, where distribution is also being installed.

GAS FOR WIBAUX

Wibaux, in eastern Montana, is to be served natural gas by the Montana-Dakota Power Co., which has the franchise to supply the town, and is laying pipe for the distributing system. It is expected service will begin long before October 1, the date specified in the franchise.

"THERM" UNIT RATE IS GROWING IN FAVOR

Opinion is reported growing in utility circles favoring a radical revision in the methods used to measure gas and on which to base domestic and industrial rates. Based to a large extent on the growing utilization of natural gas with its higher heat content, utility companies, state and Federal agencies are beginning to express dissatisfaction with the present rate structures, based on the cubic foot standard, and are beginning to advocate a change to the English system which takes into consideration the heat content of the gas.

The Peoples Gas, Heat & Coke Co. of Chicago is the only utility reported having made application for a change in its rate structure according to this principle.

Sale of natural gas on the cubic foot basis by a utility which has previously been distributing only the manufactured product might materially reduce the gross revenue from gas sales if new uses for the fuel were not developed fast enough. Some indication of this was recently made by the Pacific Gas & Electric Co., which brought natural gas from the Kettleman Hills Field into its territory. For this reason, it is thought advisable to increase the rate per 1,000 feet or to change the entire rate structure and to sell the gas according to heat content or "therm."

In an article which recently appeared in the Journal of Land and Public Utility Economics, Martin T. Bennett, gas engineer of the Wisconsin Railway and Utilities Commission, outlines the methods necessary to the inauguration of a "therm" standard and argues that this basis of gas measurement is unquestionably more scientific than the one now in current use in this country.

After recalling how the British thermal unit standard of measuring gas replaced the old candle power standard, Mr. Bennett surveys briefly the regulations adopted by municipalities and state commissions for the heat content of gas to be sold by the cubic foot standard. The English "therm" used by British gas companies for their metered sales is equal to 100,000 B.t.u. Mr. Bennett suggests the adoption of an American "therm" equal to five English "therms" as suitable for natural gas utilities.

In a statement made in Washington, E. R. Weaver, chief of the gas chemistry section of the Bureau of Standards, states that his bureau proposed a "therm" standard in this country in 1912, which proposal was not favorably received by gas companies until the recent wide scale development of natural gas.

Mr. Weaver points out that public agitation for lower rates has made both the public and the utilities lose sight of the fact that both their interests would best be served by the adoption of a more satisfactory standard from the engineering point of view. While Mr. Bennett discusses the adoption of new meters, which would measure the gas used according to the "therm" standard, Mr. Weaver states this would be unnecessary and that the rate per 1,000 feet could be changed according to the heat content of the gas supplied.

VEGREVILLE OPERATIONS

CHATHAM, Ontario, July 12.—The Vegreville Natural Gas Co., which recently secured a franchise to supply gas to the town of Vegreville, Alberta, from the municipal gas reserve is commencing a series of six structure tests south of the town. Following completion of the core-drill tests, location of a commercial well will be made by Dr. J. A. Allan of the University of Alberta. It is planned to deliver gas to Vegreville this fall.

NEW RATES ORDERED IN CALIFORNIA TOWNS

LOS ANGELES, Calif., July 12.—Interim rates for the service of natural gas by the Pacific Gas & Electric Co. in Sacramento, Stockton, Lodi, Woodland, Roseville and contiguous territory and communities in the counties of Marin, Sonoma, Napa and Solano have been fixed by the State Railroad Commission.

A reduction of 2 per cent in the company's net return during the first year of operation throughout the territory involved will result from the establishment of these rates, according to Claude C. Brown, gas administrator of the commission under whose direction the new schedules were prepared. Mr. Brown pointed out, however, that this decrease would largely be offset by increased use of gas for domestic heating. Based on the amount of heat units consumed, interim rates will reduce consumers' monthly bils from 10 to 60 per cent.

The commission has ordered the new rates to go into effect upon completion of the substitution of natural gas service in the communities involved. Complete conversion of appliances in the Sacramento and San Joaquin Valleys probably will be finished before the end of July. In the four northern counties, however, the new rates are likely to become effective in September or October, depending on the date of completion of pipe lines in this territory, now under construction.

Fresno is the only remaining community in the Pacific Gas system on which interim rates have not yet been fixed. It has been indicated that these schedules will be forthcoming shortly. A further hearing on the Fresno rates will be held August 22, but no date has yet been set for continuances on the North Bay, Sacramento and San Joaquin Valley applications.

GEO. E. WELKER CHOSEN PRESIDENT P.N.G.M.A.

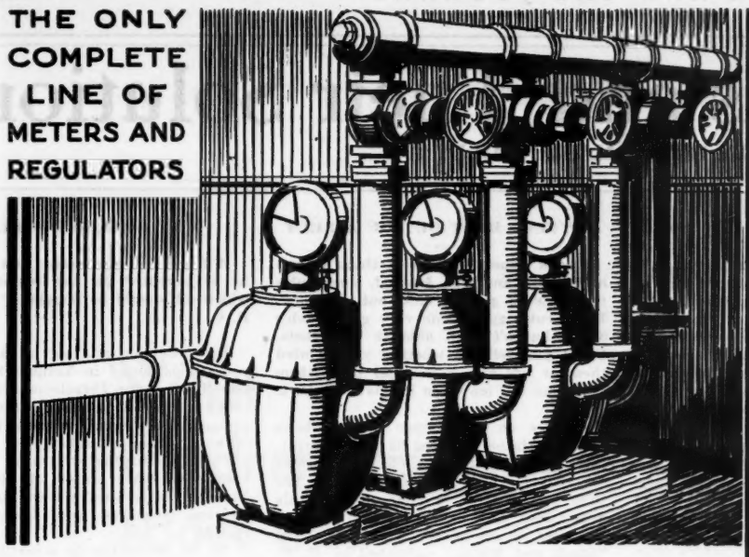
OIL CITY, Pa., July 12.—The Pennsylvania Natural Gas Men's Association has elected the following directors for the ensuing year: T. B. Gregory—vice president, Columbia Gas Electric Corp. S. W. Meals—president, Carnegie Natural Gas Co. B. D. Phillips—vice president, general manager, T. W. Phillips Gas & Oil Co. F. R. Phillips—president, Equitable Gas Co. George W. Ratcliffe—president, Manufacturers Light & Heat Co. J. F. Robinson—geologist and engineer, Peoples Natural Gas Co. E. S. Templeton—treasurer, Greenville Gas Co. J. B. Tonkin—vice president and general manager, Peoples Natural Gas Co. George E. Welker—president, United Natural Gas Co. George E. Whitwell—vice president in charge of sales, Equitable Gas Co. George Wittmer, Jr.—treasurer, Wittmer Oil & Gas Properties.

The new directors elected as officers for the next year are: President, George E. Welker, president, United Natural Gas Co.; vice president, J. F. Robinson, geologist and engineer, Peoples Natural Gas Co.; secretary-treasurer, B. H. Smyers, Jr., attorney, Equitable Gas Co.

CARBON GAS TEST

CHATHAM, Ontario, July 12.—Drilling for gas on leases near Carbon, Alberta, held by the Carbon Exploration Co., has commenced, and No. 1 test is reported drilling below 200 feet after cementing surface casing. A shallow gas show was met at 180 feet and commercial production is looked for around 400 feet, though drilling will probably be carried deeper.

THE ONLY COMPLETE LINE OF METERS AND REGULATORS



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EMCO large capacity meters with combined record gauges are particularly suited for measurement in the field.

All moving parts are mounted on one removable casting, the valve plate, making it easier to make repairs in the line. Rolling type diaphragm, patented tangent and valve movement, interchangeability of all parts, diaphragm drains, one piece case construction; all these are features that result in accurate measurement.

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All Moving Parts on Removable Casting

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Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

HARMFUL BOILER FEED WATER

I am experiencing considerable trouble with boilers used on the lease due to corrosion. The water is secured from a shallow drilled well and has been pronounced suitable for boiler feed water by a reputable chemist but the corrosion condition persists and I would like to know if you can suggest its probable cause and a remedy for this corrosive condition?—T. R. E.

A great deal has been written about corrosion in boilers and it would seem that a great deal of this is due to the presence of oxidizing agents in the water, as air, carbon dioxide, free acids or dissolved salts, such as magnesium chloride, which have a corrosive effect on iron or steel.

Corrosion in boilers takes the forms of: (1) Pitting, i.e., isolated spots of active corrosion, the boiler as a whole remaining uncorroded. (2) General corrosion. (3) Grooving. Grooving is largely a mechanical action which may be intensified by the acid in the water.

The purest waters, as rain water and melted snow, generally contain dissolved gases which will attack the plates of boilers if the latter are unprotected by a thin coating of scale. Corrosion produced by such waters may be prevented by the addition of a little milk of lime to the water. Pitting due to the dissolved gases occurs to a greater extent when the boiler is merely warm than when it is hot and in service.

Distilled water, such as returns of exhaust-steam-heating systems, may be corrosive, due to the fatty acids generated by the decomposition of the oils used in the engine. Oil should be removed from such water before it enters the boiler and the acid should be neutralized by adding a small amount of alkali.

Water in the vicinity of coal mines or streams polluted by industrial waste often contain free sulphuric acid or acid salts. Such waters should be neutralized by the addition of an alkali, as carbonate of soda. The presence of acid may be determined by the litmus paper test, the acid changing blue litmus to red. If the water simply contains free acid without any important amount of scale-forming material, carbonate of soda treatment is usually all that is necessary. But, if lime or magnesium, or both, are present, a more complicated chemical treatment is necessary and the advice of a chemist should be sought.

Kerosene oil when used as a scale preventive sometimes causes corrosion, due to the oil containing traces of sulphuric acid used in its purification. The use of zinc is frequent in marine work for the prevention of corrosion.

HOT-OIL CLEANING METHOD

Can the circulation of hot oil be recommended as a way of cleaning a well of paraffin? It would seem to be a rather simple method and yet so far as I can find out it is not in very general use. Can you recommend any other method of getting rid of paraffin that does not mean going to great expense?—N. E. N.

In the November 14, 1929, issue of The Oil and Gas Journal there is an article on page 42 about cleaning methods used in removing paraffin from wells.

The use of hot oil is satisfactory in some cases, but if the well is deep or there is oil or gas coming out of the hole the hot oil will be cooled before it can do much good.

The use of mechanical scrapers that run inside the tubing or casing is usually found effective, but it is understood that there are now two or three heating devices on the market that give promise of doing good work in removing paraffin from the inside of pipe in wells.

The Bureau of Mines recently issued a complete bulletin on the subject of cleaning wells of paraffin which is recommended to you for detailed information on this subject.

SOURCE OF GAS A QUESTION

Being interested in a wildcat well which is reported to be making some gas from around 400 feet with a hole full of water, can it be determined if this gas is coming from a paraffin base oil? There is no evidence of oil in the well at present. The well is being drilled in eastern Oregon.—M. E. S.

No information is at hand concerning the geology of eastern Oregon, so it is impossible for this department to offer anything as to the sand from which this gas in your well is being produced.

The finding of gas does not of necessity indicate that there is oil near it. It therefore does not seem to be logical to assume that the gas is from a paraffin base oil. It can be said quite definitely that gas from a limestone will contain some hydrogen sulphide and if oil is found in this same horizon it is likely to be sulphur oil and of an asphaltic base. However, some of this limestone oil is of a paraffin base.

It is suggested that you collect a sample of this gas by submerging a bottle, neck down, in a barrel of water and introducing into the bottle a rubber hose from the gas supply. When the gas has replaced the water in the bottle completely, permit the gas to continue to flow into the bottle a few minutes longer so that the gas sample will be as representative as possible and then quickly cork the bottle and seal the cork with wax. This gas can then be analyzed by a chemist and he perhaps can give you some statement concerning the probable source.

GETTING MOST OUT OF A BELT

I read somewhere, and I think it was in The Oil and Gas Journal, some rules to follow to get the most out of a belt. These rules gave some very good advice but I haven't been able to find them. Could you tell me whether you printed them or not and if you did print them could you tell me when it was?—E. D. I.

Articles on the proper care of belts and rules to be observed have been printed from time to time in The Oil and Gas Journal, but whether it published the rules you refer to in your question this department has no means of knowing. However, a set of 10 "donts" given in "Black and White," published by E. F. Houghton & Co., Philadelphia, Pa., covers the ground so well that it is reprinted here in the belief that it will serve your purpose fully. The rules were prepared by Wayne Davies of the Houghton research staff.

Don't cut the end of a belt without a steel square; a crooked point may mean a torn belt.

Don't guess at the lace holes. Each hole carries a proportion of the total load, and should be in perfect alignment with the other holes in the layout.

Don't run a belt that starts crooked. Take it off and check the joint, laced or endless, before damage is done to the whole belt; a crooked start may stretch one edge beyond repair.

Don't put a belt on too tight. Belts and bearings both have their limits; tension beyond what is needed to grip the pulleys is dangerous and costly.

Don't allow belts to be tightened by inexperienced help; have your belt man supervise this point. This can be the cause of much loss, or the means of much saving.

Don't allow shifters or other equipment to rube belt edges; leather belts grip any surface, and often elongate on one edge from serious rubbing.

Don't allow belts to operate on pulleys out of line; belt, pulleys and shafts should be in perfect alignment to give good service.

Don't hold a belt on with a bar or brace; when it wants to come off, there must be a reason. Crooked belt, pulleys or shaft out of line, or too much load; each has a separate remedy.

Don't allow mineral oil to fall on a belt. Oil causes slippage, heating, cracking; the belt manufacturer cannot help this sort of slippage. De-grease such belts with gasoline and re-oil them with neatsfoot oil before damage is done.

Don't put undersized belts in oversize service; belt stretch, wear and service are all proportional. Use belts of ample thickness and width, give them proper attention, and take the profit built into high-grade belting by reputable manufacturers.

WHY WAS IT CALLED THAT?

DEAD MEN

When the oil-field worker needed a name for the buried rock or piece of timber used in preventing high gas pressures from blowing off sections of casing, tubing or the fittings at the top of the well it didn't take him long to find one in the graveyard, and he called it a "dead man." Clamps and tie-rods anchored to these dead men have been effectual oftentimes in holding well pipe and fittings in place.

WHY IS IT 60 DEGREES?

Will you tell me, please, how 60° came to be accepted as the temperature at which oil should be bought or sold?—A. B. C.

The following relating to the question you ask is found in Volume 1 of Day's Handbook of the Petroleum Industry:

"(a) Specific gravity is the ratio expressed as a decimal between the weight of any volume of substances at 60° F. (in vacuo) to the weight of the same volume of pure water at 60° F. (in vacuo). It is always used for solid petroleum products and frequently for liquids.

"It is customary in scientific writing to express this ratio with an added abbreviated definition of the condition under which this ratio is determined. Thus the expression, 'Specific gravity, 77/60° F.' (read as specific gravity at 77 over 60° F.) means the ratio of the weight of any volume of the substance at 77° F. to the weight of the same volume of pure water at 60° F. In other words, the numerator of the fraction is the temperature at which gravity is reported and the denominator is the temperature at which water is assumed to have a specific gravity of 1.000."

This would indicate that the temperature at which oil is bought and sold is related to its gravity and this gravity rating is based upon the temperature of water to give it a specific gravity of 1.

The United States Bureau of Standards has accepted this temperature as standard and it also has been adopted by the American Petroleum Institute. It might be that you could get further information from the Bureau of Standards in Washington as to the reasons for adopting 60° F. as the temperature of water when it has a specific gravity of 1.000.

WHY THE OIL SEEMS BETTER

When casing is stuck and circulation of oil or water is restorted to to free it, is there any good reason why water is not just as good as oil for this purpose? There seems to be an idea among many oil men that the oil is better than water. If that is so I would like to know the reason why.—S. G. N.

The purpose in circulating a fluid back of casing that is stuck in the hole is to wash free the packed earth and any liquid that would accomplish this would be suitable.

Water is usually quite satisfactory for this operation, but when it has failed the driller has sometimes resorted to the use of some other fuid and oil being easiest to obtain he has substituted it for water.

This is the fundamental reason why oil has been used but since it has proven effective in some instances where water has not done the trick it is probable that reasons can be given why oil was preferable to water but it would be difficult to actually prove them for in most instances water is first tried and it might have been successful if it had been used longer, so the oil is getting credit for completing a job already started.

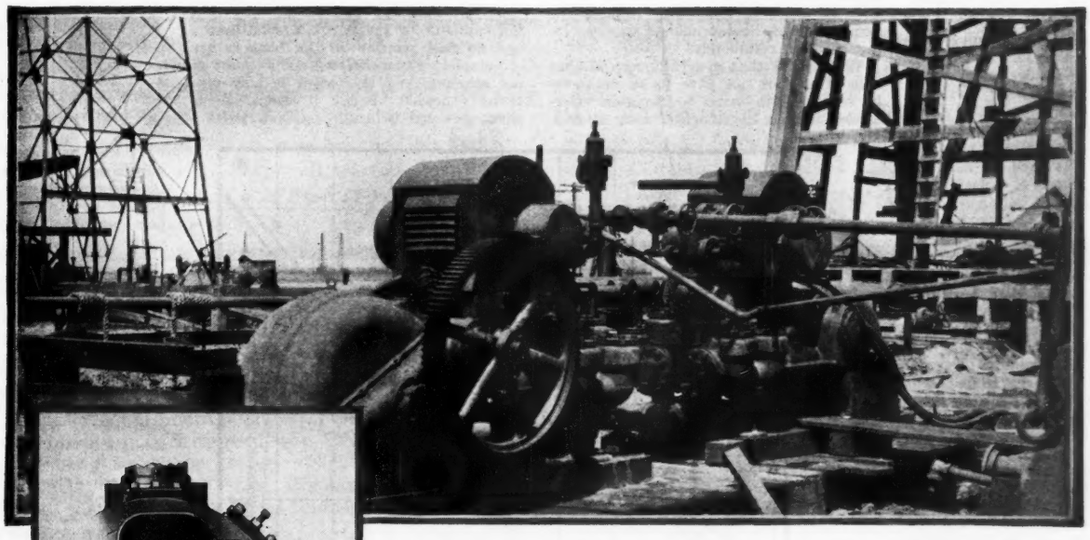
There is a lubricating quality in oil that may be of some slight advantage but if the material back of the casing is not actually free lubrication will not permit it to be pulled.

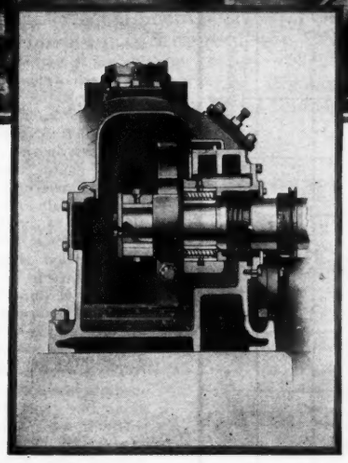
Oil is lighter than water and this might tend to permit it to enter some openings where water could not easily penetrate, but this hardly seems to be of enough significance to account for the use of oil and it is thought that if it were not easily available at the well it would not be used.

What Gardner-Denver say about their Hyattized equipment

"PUMPS and compressors in which Hyatt Roller Bearings are used gain numerous advantages from the design, construction, and operating characteristics of the bearings themselves. The chief advantage is the reduction in friction loss, by the substitution of a true rolling motion for the sliding friction of the regular plain bearings.

"Elimination of friction reduces wear, thereby keeping the main shaft, cranks and connecting rod in alignment and greatly extending the entire life of the equipment. All shaft wear is eliminated as the rollers operate on an inner race which is hardened and ground. They do not require any adjustment."





Hyattized Gardner-Denver Power Pump, built by Gardner-Denver Co., Quincy, Ill.

At left: Sectioned view of compressor, showing Hyatts in main bearing assembly.

What Gardner-Denver think of Hyatts, is a reflection of the attitude of the entire oil field industry. For wherever rugged bearing strength, and uninterrupted production is essential, Hyattized equipment is invariably preferred. No matter what the application, Hyatts offer permanent assurance of economical, dependable operation.

HYATT ROLLER BEARING COMPANY

Newark Detroit Chicago Pittsburgh Oakland

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

SIGNIFICANCE OF TESTS OF AUTOMOBILE FUELS

(Continued from Page 40)

tendency is increased by applying heat to the manifold very close to the carburetor and by the general tendency toward higher temperatures under the hood. Running the gas feed line near to the exhaust pipe also tends to increase this trouble. Some recent cars will not run smoothly on any gasoline in congested traffic in hot weather, because intermittent running and idling causes local overheating of some part of the fuel system.

The evaporation loss of gasoline is not solely a problem of the refiner and marketer of gasoline, because with very volatile gasolines there is likely to be a serious evaporation loss from the gasoline tank of a car in hot weather, especially if it is arranged so as to receive heat from the exhaust when the car is not moving. When the temperature under the hood is high, there is also likely to be a serious evaporation loss from the vacuum tank of cars thus equipped. While boiling off the light ends in this manner may tend to decrease vapor-lock troubles as compared with a gasoline pump system, it represents a waste which should be avoided if possible. However, under present conditions of overproduction the petroleum industry is grateful for the extensive use of vacuum tanks and exhaust-heated gasoline tanks and lines!

Recent work at the Bureau of Standards (19) and elsewhere has shown that the gas-free vapor pressure of a motor fuel or, to put it in another way, the temperature at which boiling begins under the pressure prevailing in the fuel induction system, is the determining factor in causing vapor-lock, as well as evaporation loss

For reasons previously stated, the initial boiling point in the A.S.T.M. test does not indicate the temperature at which boiling in the lines, or vapor-lock, is likely to occur, but the Bureau of Standards has found (19) that the actual temperature of the liquid in the A.S.T.M. flash when boiling just begins and, hence, the temperatures at which vapor-lock will begin to occur at atmospheric pressure, is almost identical with the 10 per cent point corrected for loss on the ordinary A.S.T.M. distillation§. This is also a measure of the initial evaporating tendency; so from the point of view of the three factors—ease of starting, vapor-lock, and evaporation loss—the A.S.T.M. 10 per cent point corrected for loss is the critical figure. (See Figure 1.) Both the danger of vapor-lock and the desirability of avoiding excessive evaporation tend to fix a minimum desirable temperature for the 10 per cent point. Present government specifications provide that the 10 per cent point (not corrected for loss) shall not be below 122° F., but allow a small reduction in this minimum if the distillation loss is less than 4 per cent. However, the specifications also state that for certain special purposes, such as tropical storage, this lower limit may be raised to 140° F. with the same credit for low distillation loss.

While the present government specifications allow an ample range between 122° F. and the maximum limit of 176° F. for the 10 per cent point, it has already been pointed out that most present-day commercial gasolines have a 10 per cent point below 158° F., with the 10 per cent point corrected for loss generally lying between 135° and 150° F., which temperatures are necessary to give easy starting around 0° F. The Bureau of Standards results on vapor-lock indicate that any such gasoline is likely to cause vapor-lock if the gasoline is heated above 140° F. before it is metered by the carbureter. Recent measurements on two or three makes of cars known to be subject to vapor-lock have revealed temperatures well above this—as high as 165° F. at the carburetor and 270° F. at one point in the gas line.

The above facts indicate clearly that the 10 per cent point corrected loss must be held within a very narrow margin—say, 125 to 150° F.—to obtain satisfactory performance under all reasonable driving conditions, and also indicate that even with such narrow limits there are some cars which will have trouble with vapor-lock under certain conditions. On this point the petroleum industry will have to ask the automotive engineers to so design the fuel system that the gasoline temperature before carburetion will never exceed 125 or 130° F. The petroleum refiners, on the other hand, should exclude all but traces of propane and other very wild constituents and keep the 10 per cent point of the gasoline in the narrow range above specified.

Prevention of Crankcase Dilution

In the early days of research on vaporization of gasoline it was sometimes assumed that gasoline must be completely vaporized in order to secure uniform distribution and prevent excessive waste of fuel. Research has indicated, however, that this is not true and that if a fairly large proportion of a gasoline is vaporized and the remainder is thoroughly atomized, distribution and fuel economy are practically as good as though the gasoline were completely vaporized, while the volumetric efficiency is better and the tendency to detonate much less than if the manifold were heated enough to vaporize the gasoline completely.

While it is thus generally agreed that a gasoline does not have to be completely vaporized in order to function effectively, it has nevertheless been demonstrated that the temperature of complete vaporization, or dew point, of a definite mixture of air and gasoline (say 12:1) is the controlling factor in determining the amount of fuel which will dissolve in the crankcase oil under given weather and engine operating conditions. This dilution of the crankcase oil does not occur to an extent sufficient to appreciably affect fuel consumption; but under winter conditions it may thin out the lubricant so badly as to give excessive oil consumption and even cause wear or injury to the engine. The tendency to cause dilution probably constitutes the most important present limitation on the upper boiling range of a motor fuel (46). It is also true that if there is too much high boiling material in the gasoline its distribution characteristics are likely to be inferior, causing both a loss of power and diminished economy, but few commercial gasolines of today have enough high boiling constituents to appreciably affect the mileage they will give under ordinary operating conditions. Thus while the volatility of the heavier portion of the gasoline must be reasonable, it is distinctly less important than that of the lighter portion for the reasons already discussed.

It was long ago pointed out (1) that the endpoint of the A.S.T.M. distillation had no real relation to the temperature of complete vaporization or dew point of the gasoline, and this point is now generally conceded, though it seems impossible to keep the trade or even well-informed technologists from talking in terms of endpoint as a convenient rough description of a gasoline.

A number of methods have been developed for determining the temperature of complete vaporization or dew-point of a gasoline-air mixture (1, 2, 3, 4, 5, 11) and the more recent ones are undoubtedly quite accurate and fairly rapid if suitable apparatus is available. However, the net result of all the work which has been done with these methods is to indicate that for all practical purposes the 90 per cent point of a gasoline by the ordinary A.S.T.M. distillation test corrected for loss is a reliable indication of the dew-point of given gasoline-air mixture.

Bridgeman (12) gives the following relationship (rearranged to use degrees Fahrenheit) between the corrected A.S.T.M. 90 per cent points and the dew-point of a 12:1 mixture:

$$\text{Dew point (12:1)} = \frac{\text{A.S.T.M. 90 per cent point (corrected) in deg. Fahr.}}{1.399} - 131$$

A later paper by the same author (16) indicates that for some fuels the dew-point may be determined with slightly greater accuracy by a more complicated equation involving the slope of the distillation curve, while Brown (11, 15) recommends the following equation, which generally gives a dewpoint about 2° F. lower than that from Bridgeman's equation:

$$\text{Dew point (12:1 mixture)} = \frac{5}{7}\text{(A.S.T.M. 90 per cent point (corrected) in deg. Fahr.} - 186\text{)}.$$

Whichever equation is the more accurate, it appears that the specification of the A.S.T.M. 90 per cent point is adequate to control the dew point and tendency to cause crankcase dilution. The present government specifications on this point are 392° F. for regular motor gasoline and 356° F. for a special high-volatility gasoline. This corresponds to dew points (12:1 mixture) of about 148 and 122° F., respectively.

Ease of Acceleration

While the foregoing results indicate clearly that the 10 and 90 per cent points in the A.S.T.M. distillation test are important criteria of gasoline quality, there has been considerable doubt and discussion as to whether any of the intermediate points had any appreciable bearing on performance. Earlier work had shown that these intermediate points had no appreciable bearing on the ease of starting, vapor-lock, or crankcase dilution, but it was felt that they might have an effect on the rapidity of acceleration at low engine temperatures. The Bureau of Standards has therefore carried out a very difficult and extensive line of investigations to settle this point, and its results (21) and those of Brown (22) do indicate that these intermediate constituents between 15 and 60 per cent vaporized are of importance under certain engine and weather conditions, though the differences are not large for gasolines of the same 10 and 90 per cent points.

The direct determination of the intermediate amounts vaporized under conditions like those in the manifold is very difficult, especially at the lower temperatures (15). Bridgeman (12, 13) has developed some rather simple empirical relationships between the percentage vaporized in continuous air distillation simulating manifold conditions and the A.S.T.M. distillation test but his later work (16) and that of Brown (15) indicate that this empirical relationship is not satisfactory for special types of gasoline, such as aviation gasoline or natural gasoline, which have rather markedly different shapes of distillation curve, but such conversions can be made by more compicated formulas (16) involving the slope of the distillation curve. These relationships have been used in calculating the air distillation curves for the average 1929 gasoline in Figure 1.

While the relationship between these intermediate percentages vaporized and any single point on the A.S.T.M. curve is not as definite as for the points previously considered, the consensus of pres-

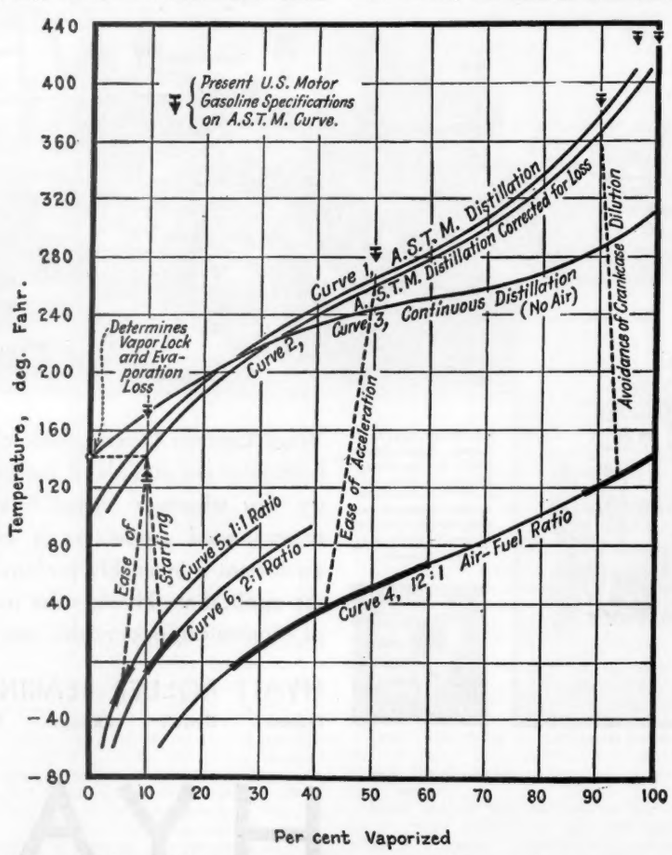


Figure 1—Various distillation curves for average 1929 gasoline showing their bearing on performance.

Curve 1 is the ordinary A.S.T.M. distillation curve for the average grade of gasoline marketed in the United States during the summer of 1929 (17); Curve 2 is the same curve corrected by adding to the lower end of the curve the average distillation loss, amounting to about 2½ per cent; Curve 3 is a calculated continuous distillation curve for the same fuel in the absence of air or steam; Curve 4 is the air distillation curve for a mixture of 12 parts of air with 1 part of this same gasoline calculated from Bridgeman's equations (16), and shows what would take place in a typical manifold at different temperatures, assuming equilibrium to be attained; Curve 5 is a calculated curve (from Bridgeman) for a 1:1 air-fuel ratio as obtained by severe choking to give starting below 0° F; Curve 6 is a similar curve for a 2:1 ratio representing less severe choking for starting at temperatures around or somewhat above 0° F. Note that 5 per cent vaporized in a 1:1 mixture or 10 per cent vaporized in a 2:1 mixture gives a 20:1 air-vapor mixture, which is about what is required for starting.

The heavy dotted lines indicate relationships which have been established between significant points on the continuous or air-distillation curves and the controlling points on the A.S.T.M. distillation curve corrected for loss.

§In a paper not yet published, but presented before the Society of Automotive Engineers by Bridgeman and Aldrich in January, 1930, it was stated that benzol blends or casinghead blends containing more than traces of propane are exceptions to this rule. If there is any substantial amount of propane present the vapor-lock temperature may be substantially lower than the 10 per cent point.

CLARENDON, PENNSYLVANIA AREA

The first well of importance in the Clarendon Oil Field was drilled on the Eagan Farm July, 1880. Located in Meade Township in what is now a part of Clarendon Borough, the initial production was reported at 50 barrels a day. This well is still producing about 1/16 barrel per day. The Clarendon Field is about ten miles in diameter and includes the historic wells found in Kinzua, Dutchman's Run, Brown Run, Morrison Run, Wardwell, Stoneham, Wellbank, Tiona, Six Mile and part of the Glade Township District. While there were spots where it was difficult to trace the connection between pools, the average well produced from 10 to 100 barrels. The average daily production from this district is between 1/16 and 1/18 barrel per well per day under natural conditions. At the present time there is being contemplated a water flood on the Clarendon Sand, similar to the methods used in the Bradford Area.

Lying directly southwest of the Clarendon Sand Pool is the Cherry Grove Pool, which was discovered March 10, 1882, by Grace and Dimick. As soon as oil was found the rig was boarded up and an armed guard placed around the rig. This well started flowing in April, 1882, and the initial production the first 24 hours was reported at 2500 barrels. This well was known as the "Mystery 646", being drilled on lot 646 Cherry Grove Township. On lot 619 the Murphy Well was reported at 3460 barrels, both wells producing from the Cherry Grove Sand. Around these wells grew up almost over night the town of Garfield, which history states reached the population of 6000 before the field began to decline. Today the town has passed away and very few wells are producing from this pool.

Northwest of the Clarendon Pool, with its southeastern edge overlapping the northwestern edge of the Clarendon Pool, is the Glade Pool, producing from the Glade Sand and within the bounds of which lays the City of Warren, the county seat of Warren County. This pool was opened in 1875 by the Beatty Well, which was reported a fair producer with quite a large volume of gas. The average wells in this pool were very much like the wells in the Clarendon Pool and the average production per well today is between 1/16 and 1/18 barrel per day.

The average depth of the sands are as follows:
Glade Sand—found at a depth of 892 feet. Clarendon Sand—992 feet. Gartland Sand—1042 feet. Cherry Grove Sand—1092 feet. Ball Town Sand—1122 feet. Cooper Sand—1332 feet.

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Friction Surface Rubber Belting made to our own specifications.

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Valves for the Petroleum Industry.

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Gas Engines, two and four-cycle; Band Wheel and Direct Drive Pumping Powers, Receiving Boxes and other refinery equipment.

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ent opinion is that a specification of the A.S.T.M. 50 per cent point which is not so rigid as to curtail the yield of gasoline obtainable from a well-balanced refinery, but which is strict enough to prevent the use of freak blends, is desirable in order to insure reasonably good acceleration and distribution characteristics at moderate temperatures.

If the 10, 50 and 90 per cent points of the gasoline are properly specified, in the light of the above discussion, there seems no need of any other specification to insure an entirely satisfactory product so far as volatility is concerned. There is no particular objection on the part of the refiners to a reasonable endpoint specification, but it seems to have no real bearing on performance, and hence no proper place in specifications.

(The concluding part of this article will be published in the next issue of The Oil and Gas Journal).

REFERENCES

(1) R. E. Wilson and D. P. Barnard, 4th, "Condensation Temperature of Gasoline and Kerosene-Air Mixtures," Industrial and Engineering Chemistry, Vol 13, p. 906 (1921).
(2) R. E. Wilson and D. P. Barnard, 4th, "Dew Points of Gasoline-Air Mixtures," Industrial and Engineering Chemistry, Vol. 17, p. 428 (1925); also Journal, Soc. Automotive Engrs., Vol. 12, p. 287 (1923).
(3) W. A. Gruse, "Direct Determination of Dew Points of Gasoline-Air Mixtures," Industrial and Engineering Chemistry, Vol. 15, p. 796 (1923); also The Oil and Gas Journal, Vol. 22, p. 86 (1924); also Petroleum Age, Vol. 12, p. 20 (1924); also Chemical and Metallurgical Engineering, Vol. 29, p. 970 (1924), and Vol. 30, p. 364 (1924).
(4) R. Stevenson and H. J. Stark, "Equilibrium Vaporization of Gasoline," Industrial and Engineering Chemistry, Vol. 17, p. 679 (1925).
(5) R. Stevenson and J. A. Babor, "Determination of Volatility of Gasoline," Industrial and Engineering Chemistry, Vol. 19, p. 1,361 (1927).
(6) W. A. Whatmough, "Relation Between Fuel Deposition Temperature and Equilibrium Boiling Point," Industrial and Engineering Chemistry, Vol. 18, p. 609 (1926).
(7) W. A. Whatmough, "Equilibrium Boiling Points," Proceedings, Inst. Automotive Engrs., Vol. 17, p. 346 (1922); Industrial and Engineering Chemistry, Vol. 18, p. 43 (1926); Automotive Engineering, Vol. 17, pp. 15, 452 and 484 (1926).
(8) W. S. James, "Gasoline Volatility," Journal, Soc. Automotive Engrs., Vol. 18, p. 501 (1926); Bulletin, Am. Petroleum Inst., Vol. 7, No. 27, p. 117 (1926); National Petroleum News, Vol. 18, p. 85 (1926).
(9) T. S. Sligh, Jr., "Progress in the Measurement of Motor Fuel Volatility," Journal, Soc. Automotive Engrs., Vol. 18, p. 393 (1926); also "Volatility Tests for Automobile Fuels," Vol. 19, p. 151 (1926).
(10) C. S. Cragoe and J. O. Elsinger, "Fuel Requirements for Engine Starting," Journal, Soc. Automotive Engrs., Vol. 20, p. 353 (1927).
(11) G. G. Brown, "The Relation of Motor Fuel Characteristics to Engine Performance," Engineering Research Bulletin No. 7, University of Michigan, May, 1927, pp. 46 and 53.
(12) O. C. Bridgeman, "Volatility Data from Gasoline Distillation Curves," Journal, Soc. Automotive Engrs., Vol. 22, p. 437 (1928).
(13) O. C. Bridgeman, "Dew Point Data on Gasoline," Journal, Soc. Automotive Engrs., Vol. 23, p. 478 (1928).
(14) O. C. Bridgeman, "Equilibrium Volatility of Motor Fuels," Bulletin, Am. Petroleum Inst., Vol. 10, No. 2, Sec. 2, p. 124 (1929).
(15) G. G. Brown and E. M. Skinner, "Motor Fuel Volatility," Industrial and Engineering Chemistry, Vol. 22, p. 278 (1930).
(16) O. C. Bridgeman, "Present Status of Equilibrium-Volatility Work at Bureau of Standards," Journal, Soc. Automotive Engrs., Vol 25, p. 345 (1929).
(17) E. C. Lane, S. S. Taylor and C. J. Wilhelm, "Twentieth Semiannual Motor Gasoline Survey," United States Bureau of Mines Report, Serial 2,959 (1929).
(18) H. C. Dickinson, Foreword to following paper, Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 4 (1930).
(19) O. C. Bridgeman, E. W. Aldrich and H. S. White, "Vapor Pressures of Gas-Free Gasolines," Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 4 (1930).
(20) A. C. Brown and G. C. Caine, "Vapor-Liquid Equilibrium in Complex Hydrocarbon Mixtures," Transactions, Am. Inst. Chemical Engrs., Vol. 21. p. 91 (1928).
(21) D. B. Brooks, "Economic Fuel-Volatility and Engine Acceleration," Journal Soc. Automotive Engrs., Vol. 24, p. 609 (1929).
(22) G. G. Brown and J. E. Miller, "Motor Fuel Volatility: Part 2. Effective Volatility as Related to Equilibrium Volatility and the A.S.T.M. Distillation," Paper before Am. Chemical Soc., Minneapolis, September, 1929.
(23) H. C. Dickinson, "When Is Gasoline Satisfactory as Motor Fuel," Chemical and Metallurgical Engineering, Vol. 33, May, 1926, p. 293.
(24) Papers and Discussion, Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, pp. 112-132 (1930).
(25) V. Voorhees and J. O. Elsinger, "The Importance and Significance of Gum in Gasoline," Proceedings, Am. Petroleum Inst., Vol. 10, No. 2, Sec. 2, p. 169 (1929); also Journal, Soc. Automotive Engrs., Vol. 24, p. 584 (1929).
(26) M. B. Cooke, "Reports of Investigations, No. 2,686, A Convenient Method for Determining Gum-Forming Material in Gasoline," United States Bureau of Mines Report, Serial 2,686 (1925).
(27) E. B. Hunn, H. G. M. Fischer and A. J. Blackwood, "Gum in Gasoline," Journal, Soc. Automotive Engrs., Vol. 26, p. 31 (1930).
(28) E. C. Herthel and F. Apgar, "Some Phenomena of Gum Determination of Motor Fuels," Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 124 (1930).
(29) C. R. Wagner and J. Hyman, "Factors Affecting Determination of Gum in Gasoline," Proceedings, Am. Petroleum Inst., Sec. 3, p. 118 (1929).
(30) G. Egloff, W. F. Faragher and J. C. Morrell, "Stabilization of Knock Rating, Gums, and Color of Gasoline by Chemical Inhibitors," Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 112 (1930).
(31) V. Voorhees, remarks during discussion, Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 129 (1930).
(32) G. Edgar, "Detonation Specifications for Automotive Fuels," Journal, Soc. Automotive Engrs., Vol. 20, p. 345 (1927).
(33) R. Stansfield and F. B. Thole, "Standardization of Conditions for Measuring the Detonation Characteristics of Motor Fuels," Industrial and Engineering Chemistry, Analytical Ed., Vol. 1, p. 98 (1929).
(34) J. M. Campbell, W. G. Lovell and T. A. Boyd, "Detonation Characteristics of Some of the Fuels Suggested as Standards of Antiknock Quality," Journal, Soc. Automotive Engrs., Vol. 26, p. 163 (1930); also The Oil and Gas Journal, January 23, 1930, p. 42.
(35) E. Bartholomew, "Progress in Knock Testing," National Petroleum News, October 16, 1929, p. 37; October 23, 1929, p. 57.
(36) H. K. Cummings, "Results of Two Detonation Surveys," Journal, Soc. Automotive Engrs., Vol. 22, April, 1928, p. 448.
(37) N. McCoull, "Methods of Measuring Detonation," Journal, Soc. Automotive Engrs., Vol. 22, April, 1928, p. 457.
(38) Summary of Knock-Test Methods, Report of Subcommittee on Methods for Rating Fuels for Knock Tendency, Journal, Soc. Automotive Engrs., Vol. 25, July, 1929, p. 80.
(39) H. L. Horning, "Standardization of Antiknock Testing," Proceedings, Am. Petroleum Inst., Vol. 11, No. 1, Sec. 3, p. 32 (1930).
(40) H. C. Mougey, "Sulphur in Gasoline from the Automobile Standpoint," Industrial and Engineering Chemistry, Vol. 20, p. 18 (1928).
(41) S. H. Diggs, "Effect of Sulphur in Gasoline on Wrist Pin Corrosion in Automobiles," Industrial and Engineering Chemistry, Vol. 20, p. 16 (1928).
(42) R. A. Halloran, "Method of Refining Cracked Naphtha," The Oil and Gas Journal, December 8, 1927, p. 36.
(43) R. C. Griffin, "Determination of Sulphur in Petroleum Oil," Industrial and Engineering Chemistry, Vol. 21, p. 167 (1929).
(44) G. Edgar and G. Calingaert, "Determination of Sulphur in Gasoline," Industrial and Engineering Chemistry, Analytical Ed., Vol. 2, p. 104 (1930).
(45) Report of Subcommittee 7, of A.S.T.M. Committee D-2, on Sulphur Determination and Differentiation, Proceedings, Am. Soc. Testing Mats., Vol. 29, Part 1, p. 362 (1929).
(46) Roger Birdsell, "Economic Motor Fuel Volatility," Journal, Soc. Automotive Engrs., Vol. 14, March, 1924, p. 267; Vol. 15, July, 1924, p. 69.
(47) G. G. Brown and H. E. Zuck, "Perfect Certified Knock Rating Test," The Oil and Gas Journal, January 9, 1930, p. 44.

BOOK REVIEWS

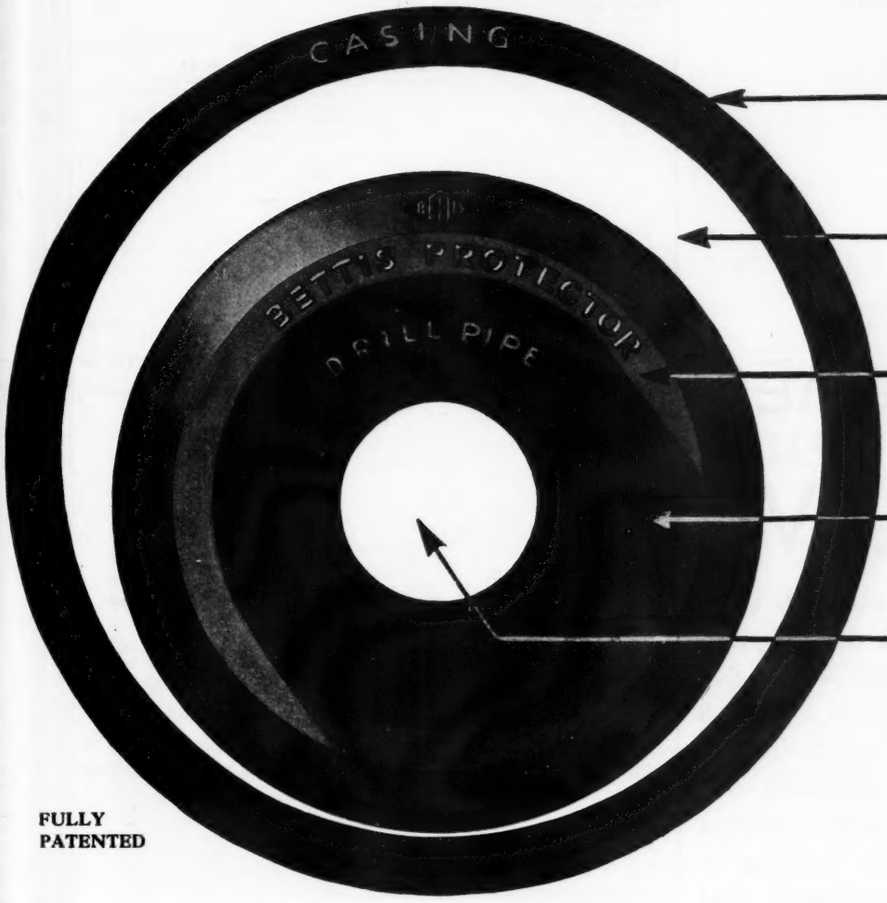
The eighth edition of Robert Schwarz's "Petroleum Vademecum," in two volumes, has just been published. ($6.) It contains international tables relating to petroleum published in three languages, English, French and German, and is a source of much valuable information about oil. Verlag fur Fachliteratur, Berlin W 62, Courbierestr, 3.

"Electricity for Beginners" is an elementary work on electricity written in nontechnical language by Edward Harper Thomas, prepared originally for manual training classes in grade schools, published by Norman W. Henley Publishing Co., 2 West Forty-fifth Street, New York City. Price $1.50. The reader will find it valuable as a fundamental text and introductory to a more advanced study.

P. B. LAMBERTON DIES

Park B. Lamberton, former Tulsa oil man who had been in New Mexico for his health for three years and for 15 years had been engaged in the oil business died in Santa Fe last week.

The Solid Ring of Bettis Rubber Wears Longest



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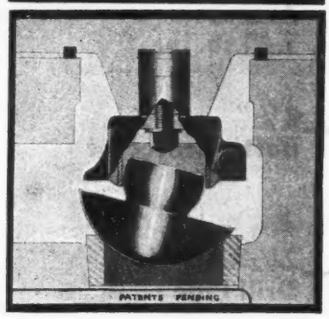

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BUREAU OF MINES STATISTICS ON PETROLEUM

(Continued from Page 74)

mine, all operations during May, 1930. These refineries operated at 73 per cent of their recorded capacity, given above, as compared with 355 refineries operating at 73 per cent of their capacity in April.

RECORD OF WELLS FOR VARIOUS IMPORTANT FLUSH FIELDS, MAY, 1930*

	Completions Oil	Gas	Dry	Total initial production (bbls.)	Average initial production (bbls.)	Drilling May 31
Seminole, St. Louis, etc.	51	6	22	42,300	800	154
West Texas	64	..	25	31,300	500	219
Long Beach	11	..	..	3,700	300	85
Santa Fe Springs	12	..	..	2,800	200	23

*From The Oil and Gas Journal and California office of American Petroleum Institute.

PRODUCTION OF MOTOR FUEL
(Thousands of barrels of 42 U. S. gallons)

	May, 1930 Total	May, 1930 Dy.av.	April, 1930 Total	April, 1930 Dy.av.	Jan.-May, 1930	Jan.-May, 1929
Gasoline produced at refineries:						
Straightrun	20,591	664	20,253	675	98,277	99,902
Cracked	14,542	469	13,438	448	66,436	53,806
Natural gasoline:						
Blended at refineries	3,480	112	3,794	127	17,576	16,555
Run through pipe lines*	205	7	194	6	1,031	705
Total	38,818	1,252	37,679	1,256	183,320	170,972
Other natural gasoline:						
Blended at plants†	21	1	25	1	122	269
Sold direct to jobbers†	200	6	200	7	1,100	250
Benzol produced‡	254	8	253	8	1,238	1,249
Total motor fuel	39,293	1,267	38,157	1,272	185,780	172,760

*To refineries in California. †East of California. ‡Estimated with production of by-product coke as a basis.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA
(Thousands of barrels of 42 U. S. gallons)

Domestic petroleum by fields of origin:	May, 1930 Total	May, 1930 Dy.av.	April, 1930 Total	April, 1930 Dy.av.	Jan.-May, 1930	Jan.-May, 1929
Appalachian:						
Pennsylvania grade	1,939	62	2,151	72	10,062	13,101
Other (inc. Kentucky)	818	26	836	28	4,000	
Lima-Northeast Indiana-Michigan	388	12	292	10	1,976	1,725
Illinois-Southwest Indiana	670	22	565	19	3,294	3,200
Mid-Continent:						
North Louisiana and Arkansas	2,973	96	2,930	98	15,308	19,617
West Texas-S. E. New Mexico	11,781	380	11,183	373	54,723	215,831
Other (Oklahoma, Kansas, North Texas, etc.)	34,582	1,116	33,469	1,116	162,246	
Gulf Coast:						
Grade A	2,963	96	3,529	117	14,392	19,481
Grade B	3,062	99	1,639	54	14,547	
Rocky Mountain	2,006	65	2,044	68	9,813	11,261
California	....	..	5	..	9	..
Total demand	61,182	1,974	58,643	1,955	290,370	284,216
Exports	1,449	47	1,085	36	5,732	5,710
Domestic demand	59,733	1,927	57,558	1,919	284,638	278,506
Foreign petroleum	5,890	190	5,676	189	25,698	37,237
Total domestic demand east of California	65,623	2,117	63,234	2,108	310,336	315,743

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE
(Thousands of barrels of 42 U. S. gallons)

	May, 1930 Total	May, 1930 Dy.av.	April, 1930 Total	April, 1930 Dy.av.	Jan.-May, 1930 Total	Jan.-May, 1930 Dy.av.
Production	4,507	145	4,428	148	22,169	147
Decrease in all stocks	....	..	....	..	.....	...
Total	4,507	145	4,428	148	22,169	147
Blended at refineries	3,480	112	3,794	127	17,576	116
Run through pipe lines in California	205	7	194	6	1,031	7
Blended at plants*	21	1	25	1	122	1
Sold direct to jobbers*	200	6	200	7	1,100	7
Increase in all stocks	391	12	36	1	1,048	7
Balance	210	7	179	6	1,292	9
Total	4,507	145	4,428	148	22,169	147

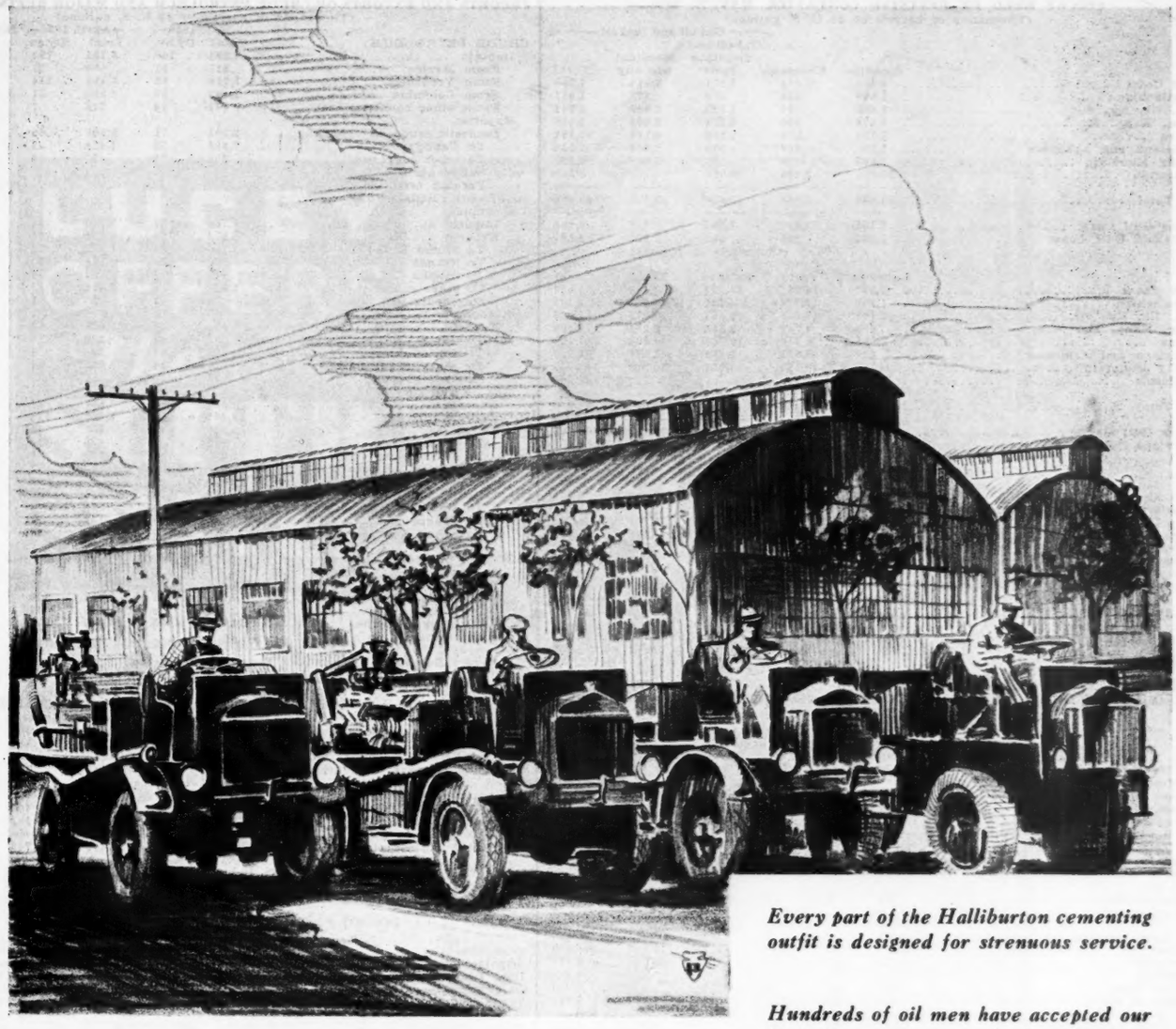
*East of California.

SUPPLY AND DEMAND OF ALL OILS
(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

NEW SUPPLY:	May, 1930	April, 1930	May, 1929	Jan.-May, 1930	Jan.-May, 1929
Domestic production:					
Crude petroleum	80,176	77,175	84,415	388,615	404,712
Daily average	2,586	2,573	2,723	2,574	2,688
Natural gasoline	4,507	4,428	4,343	22,169	20,658
Benzol	254	253	267	1,238	1,269
Total production	84,937	81,856	89,025	412,022	426,631
Daily average	2,740	2,729	2,872	2,729	2,825
Imports:					
Crude petroleum	4,984	5,781	7,552	25,363	37,261
Refined products	3,603	3,214	2,732	17,560	8,647
Total new supply, all oils	93,524	90,851	99,309	454,945	472,539
Daily average	3,017	3,028	3,204	3,013	3,129
Increase in stocks, all oils	1,266	*1,894	3,607	11,448	41,017
DEMAND:					
Total demand	92,258	92,745	95,702	443,497	431,522
Daily average	2,976	3,092	3,087	2,937	2,858
Exports:					
Crude petroleum	2,203	1,900	1,932	9,586	8,880
Refined products	9,410	12,442	10,928	56,391	53,306
Domestic demand	80,645	78,403	82,842	377,520	369,336
Daily average	2,601	2,613	2,672	2,500	2,446
Excess of daily average domestic production over domestic demand	139	116	200	229	379
STOCKS (end of month):					
Crude petroleum:					
East of California†	378,919	379,875	379,542	378,919	379,542
California‡	148,472	149,802	132,670	148,472	132,670
Total crude	527,391	529,677	512,212	527,391	512,212
Natural gasoline at plants	920	709	1,390	920	1,390
Refined products	165,581	162,240	141,878	165,581	141,878
GRAND TOTAL STOCKS, ALL OILS	693,892	692,626	655,480	693,892	655,480
Days' supply	233	224	212	236	229
Bunker oil (included above in domestic demand	4,657	4,234	4,704	21,256	21,263

*Decrease. †Excludes producers' stocks. ‡Includes residual fuel oil and producers' stocks.

(Continued on Next Page)



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STOCKS HELD BY REFINING COMPANIES, MAY 31, 1930

(Thousands of barrels of 42 U. S. gallons)

	Gasoline	Kerosene	Gas oil and fuel oil: Gas oil and distillate fuels	Gas oil and fuel oil: Residual fuel oils	Total
East Coast	8,848	1,614	3,171	4,419	7,590
Appalachian	1,969	324	679	372	1,051
Ind., Ill., Ky., etc.	8,665	614	1,192	2,549	3,741
Okla., Kans., Mo.	5,475	826	2,214	2,802	5,016
Texas	7,554	1,575	2,216	8,175	10,391
Louisiana and Arkansas	2,551	850	574	1,560	2,134
Rocky Mountain	2,881	236	90	1,066	1,156
California	16,091	2,345	5,585	....	5,585
Total	54,034	8,384	15,721	20,943	36,664
Texas Gulf Coast	5,707	1,437	1,767	5,101	6,868
Louisiana Gulf Coast	2,139	816	359	822	1,181

	Wax (thousands of pounds): Lubricants	Crude scale	Refined	Total	Coke (tons)
East Coast	3,312	74,057	23,027	97,084	31,000
Appalachian	1,350	22,724	4,139	26,863	7,000
Ind., Ill., Ky., etc.	708	16,928	3,351	20,279	82,200
Okla., Kans., Mo.	600	4,726	2,358	7,084	79,400
Texas	2,084	1,256	12,145	13,401	284,700
Louisiana and Arkansas	131	61,093	2,478	63,571	61,500
Rocky Mountain	150	18,621	1,621	20,242	116,500
California	1,243	.....	.....	.....	124,700
Total	9,578	199,405	49,119	248,524	786,100
Texas Gulf Coast	1,995	1,008	12,145	13,153	264,300
Louisiana Gulf Coast	123	61,093	2,478	63,571	61,500

	Other finished products: Asphalt (tons)	Road oil	Miscellaneous	Total	Unfinished oils: Natural gasoline	Other	Total
East Coast	135,600	52	26	78	80	8,090	8,170
Appalachian	4,300	2	85	87	13	1,567	1,580
Ind., Ill., Ky., etc.	58,900	70	202	272	42	5,209	5,251
Okla., Kans., Mo.	3,400	13	28	41	10	3,048	3,058
Texas	12,600	11	17	28	92	15,160	15,252
Louisiana and Arkansas	49,700	..	5	5	18	3,391	3,409
Rocky Mountain	4,900	82	11	93	3	1,889	1,892
California	47,400	168	151	319	2,159	*8,588	10,747
Total	316,800	398	525	923	2,417	46,942	49,359
Texas Gulf Coast	12,500	11	7	18	77	13,427	13,504
Louisiana Gulf Coast	45,000	..	5	5	5	2,664	2,669

*Includes 2,837,000 bbls. tops.

PRODUCTION OF CRUDE PETROLEUM BY STATES WITH CLASSIFICATION BY GRAVITY

(Thousands of barrels of 42 U. S. gallons)

	May, 1930: Total	May, 1930: Dy.av.	April, 1930: Total	April, 1930: Dy.av.	Jan.-May, 1930	Jan.-May, 1929
Arkansas	1,673	54	1,707	57	8,427	11,273
California:						
Long Beach	2,949	95	3,098	103	15,614	27,748
Santa Fe Springs	3,720	120	3,842	128	22,532	25,715
Rest of State	12,375	399	11,829	395	62,236	63,897
Total California	19,044	614	18,769	626	100,382	117,360
Colorado	137	4	134	4	694	1,012
Illinois	537	17	460	15	2,545	2,567
Indiana:						
Southwestern	87	3	87	3	405	394
Northeastern	6	...	5	...	22	26
Total Indiana	93	3	92	3	427	420
Kansas	3,969	128	3,498	117	17,182	16,023
Kentucky	657	21	641	21	3,178	2,874
Louisiana:						
Gulf Coast	628	20	568	19	2,911	2,993
Rest of State	1,166	38	1,281	43	5,984	5,219
Total Louisiana	1,794	58	1,849	62	8,895	8,212
Michigan	356	11	333	11	1,796	823
Montana	269	9	286	10	1,214	1,395
New Mexico	588	19	400	13	1,903	408
New York	393	13	374	12	1,782	1,328
Ohio:						
Central and East	464	15	466	16	2,243	2,132
Northwestern	123	4	120	4	567	568
Total Ohio	587	19	586	20	2,810	2,700
Oklahoma:						
Osage County	....	...	1,100	37	.....	6,531
Oklahoma City	3,582	115	3,276	109	13,806	601
Seminole	7,433	240	6,993	233	38,791	61,040
Rest of State	....	...	8,282	276	.....	38,244
Total Oklahoma	20,959	676	19,651	655	97,219	106,416
Pennsylvania	1,312	42	1,298	43	6,116	4,529
Tennessee	1	...	1	...	5	10
Texas:						
Gulf Coast	5,376	173	5,289	177	26,094	18,597
West Texas	9,595	310	9,505	317	49,397	56,959
Rest of State	10,786	348	10,271	342	48,637	41,894
Total Texas	25,757	831	25,065	836	124,128	117,450
West Virginia	478	16	474	16	2,312	2,290
Wyoming:						
Salt Creek	914	30	926	31	4,507	4,649
Rest of State	658	21	631	21	3,093	2,973
Total Wyoming	1,572	51	1,557	52	7,600	7,622
U. S. Total	80,176	2,586	77,175	2,573	388,615	404,712

PRODUCTION OF CRUDE PETROLEUM BY FIELDS

(Thousands of barrels of 42 U. S. gallons)

FIELD:	May, 1930: Total	May, 1930: Dy.av.	April, 1930: Total	April, 1930: Dy.av.	Jan.-May, 1930	Jan.-May, 1929
Appalachian:						
Pennsylvania grade	2,448	79	2,408	80	11,466	9,321
Other (inc. Kentucky)	858	28	846	28	4,171	3,842
Lima-Northeast Indiana-Michigan	484	15	458	15	2,384	1,417
Illinois-Southwest Indiana	624	20	547	18	2,950	2,961
Mid-Continent:						
North Louisiana and Arkansas	2,839	92	2,988	100	14,411	16,492
West Texas-S.E. New Mexico	10,140	328	9,849	328	51,064	57,175
Other (Okla., Kans., N. Tex., etc.)	35,714	1,152	33,420	1,114	163,038	164,333
Gulf Coast:						
Grade A	2,728	88	2,931	98	13,747	9,277
Grade B	3,276	105	2,926	98	15,258	12,313
Rocky Mountain	2,021	65	2,033	68	9,744	10,221
California	19,044	614	18,769	626	100,382	117,360
Total	80,176	2,586	77,175	2,573	388,615	404,712
CLASSIFICATION BY GRAVITY (approximately):						
Light crude	71,460	2,305	68,105	2,270	343,348	364,076
Heavy crude	8,716	281	9,070	303	45,267	40,636

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons)

	May, 1930: Total	May, 1930: Dy.av.	April, 1930: Total	April, 1930: Dy.av.	Jan.-May, 1930	Jan.-May, 1929
CRUDE PETROLEUM:						
Imports	4,984	161	5,781	193	25,363	37,261
From Mexico	817	27	630	21	2,789	4,293
From Venezuela	2,724	88	3,413	114	15,346	25,676
From Colombia	1,002	32	1,520	51	6,020	5,725
From other countries	441	14	218	7	1,208	1,567
Exports:						
Domestic crude oil	2,203	71	1,900	63	9,586	8,880
To Canada	1,808	58	1,428	47	7,342	7,118
To other countries	395	13	472	16	2,244	1,760
Shipments	....	..	....	..	....	3
Foreign crude oil	....	..	....	..	....	....
REFINED PRODUCTS:						
Gasoline:						
Imports	1,768	57	1,319	44	6,488	2,783
Exports	4,953	160	5,731	191	27,039	23,164
To United Kingdom	1,386	45	1,791	60	7,990	6,820
To France	760	25	899	30	4,365	3,275
To Canada	419	13	352	11	1,223	1,638
To other countries	2,355	76	2,666	89	12,902	10,904
Shipments	33	1	23	1	459	517
Kerosene:						
Exports	826	27	1,620	54	7,364	8,528
To China	67	2	395	13	1,003	1,403
To United Kingdom	26	1	132	4	904	1,448
To other countries	723	24	1,002	34	5,304	5,553
Shipments	10	..	91	3	153	104
Gas oil and fuel oil:						
Imports	1,810	58	1,837	61	10,810	5,709
Exports	2,402	77	3,729	124	15,874	15,086
To Chile	335	11	436	14	1,963	2,454
To Panama	152	5	435	14	1,291	1,046
To other countries	1,652	53	2,525	85	10,881	10,352
Shipments	263	8	333	11	1,739	1,234
Lubricants:						
Exports	864	28	991	33	4,362	4,662
To United Kingdom	228	7	124	4	935	683
To France	112	4	147	5	605	676
To other countries	518	17	710	24	2,782	3,266
Shipments	6	..	10	..	40	37
Wax (thousands of pounds):						
Imports	3,726	120	4,280	143	14,457	14,105
Exports	21,405	690	20,066	669	112,634	116,877
To United Kingdom	7,354	237	3,602	120	25,378	28,179
To Italy	2,403	78	1,419	47	16,448	11,999
To other countries	11,643	375	15,041	502	70,795	76,673
Shipments	5	..	4	..	13	26

*From Bureau of Foreign and Domestic Commerce.

RUNS TO STILLS AND OUTPUT OF REFINERIES, MAY, 1930

(Thousands of barrels of 42 U. S. gallons)

	Crude oil: Domestic	Crude oil: Foreign	Crude oil: Total	Unfinished oils rerun	Natural gasoline	Total input
East Coast	9,723	5,078	14,801	1,337	138	16,276
Appalachian	3,047	....	3,047	180	40	3,267
Indiana, Illinois, Kentucky, etc.	10,442	....	10,442	96	211	10,749
Oklahoma, Kansas, Missouri	10,589	....	10,589	358	386	11,333
Texas	19,463	92	19,555	745	1,045	21,345
Louisiana and Arkansas	5,073	448	5,521	382	389	6,292
Rocky Mountain	1,970	....	1,970	468	124	2,562
California	17,722	....	17,722	183	*1,352	19,257
United States total	78,029	5,618	83,647	3,749	3,685	91,081
Texas Gulf Coast	13,815	92	13,907	399	800	15,106
Louisiana Gulf Coast	3,303	448	3,751	42	260	4,053

	Gas oil and fuel oils: Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Total	Lubricants	Wax (thousands of lbs.)†
East Coast	5,532	584	1,619	5,084	6,703	870	15,400
Appalachian	1,408	354	190	354	544	491	9,800
Ind., Ill., Ky., etc.	5,912	451	963	2,193	3,156	423	4,480
Oklahoma, Kansas, Missouri	5,835	853	406	2,846	3,252	283	3,080
Texas	9,052	987	1,622	6,255	7,877	753	4,480
Louisiana and Arkansas	2,514	475	648	1,502	2,150	81	7,560
Rocky Mountain	1,250	88	106	461	567	42	1,120
California	7,315	525	1,822	7,990	9,812	242	....
United States total	38,818	4,317	7,276	26,685	33,961	3,185	45,920
Texas Gulf Coast	6,498	705	1,212	3,797	5,009	719	4,200
Louisiana Gulf Coast	1,834	403	380	753	1,133	66	7,560

	Other finished products: Coke (tons)†	Asphalt (tons)†	Road oil	Miscellaneous	Total	Unfinished products	Shortage
East Coast	17,300	162,200	109	43	152	868	632
Appalachian	4,100	3,300	3	28	31	211	154
Ind., Ill., Ky., etc.	52,700	51,600	82	23	105	126	7
Oklahoma, Kansas, Missouri	32,600	3,800	12	65	77	332	503
Texas	38,400	17,100	14	35	49	1,343	978
Louisiana and Arkansas	13,700	58,300	..	147	147	292	215
Rocky Mountain	11,400	400	38	7	45	461	45
California	200	39,800	119	187	306	‡358	479
United States total	170,400	336,500	377	535	912	3,991	3,013
Texas Gulf Coast	31,200	17,100	14	2	16	1,217	674
Louisiana Gulf Coast	13,500	51,100	..	139	139	16	85

*Includes 205,000 bbls. run through pipe lines. †Wax, coke and asphalt equivalent to 280 pounds per barrel and 5.1 and 5.5 bbls. per ton, respectively. ‡Includes 53,000 bbls. net tops produced.

GASOLINE PRODUCTION BY THE VARIOUS METHODS—MAY, 1930

(Thousands of barrels of 42 U. S. gallons)

	Straightrun: Total	Straightrun: %	Cracked: Total	Cracked: %	Nat. gasoline: Total	Nat. gasoline: %	Grand total
East Coast	2,725	49	2,669	48	138	3	5,532
Appalachian	884	63	484	34	40	3	1,408
Indiana, Illinois, Kentucky, etc.	3,044	51	2,657	45	211	4	5,912
Oklahoma, Kansas, Missouri	3,377	58	2,072	35	386	7	5,835
Texas	4,312	48	3,695	41	1,045	11	9,052
Louisiana and Arkansas	926	37	1,199	48	389	15	2,514
Rocky Mountain	563	45	563	45	124	10	1,250
California	4,760	65	1,203	16	*1,352	19	7,315
Total	20,591	53	14,542	37	3,685	10	38,818
Texas Gulf Coast	2,655	41	3,043	47	800	12	6,498
Louisiana Gulf Coast	679	37	895	49	260	14	1,834

*Includes 205,000 bbls. run through pipe lines.

NUMBER OF WELLS COMPLETED ALL FIELDS*

	May, 1930	April, 1930	Jan.-May, 1930	Jan.-May, 1929
Oil	1,233	1,151	5,503	5,695
Gas	213	211	997	1,037
Dry	649	621	2,790	3,094
Total	2,095	1,983	9,290	9,826

*From The Oil and Gas Journal and California office of American Petroleum Institute.

(Continued on Page 109)

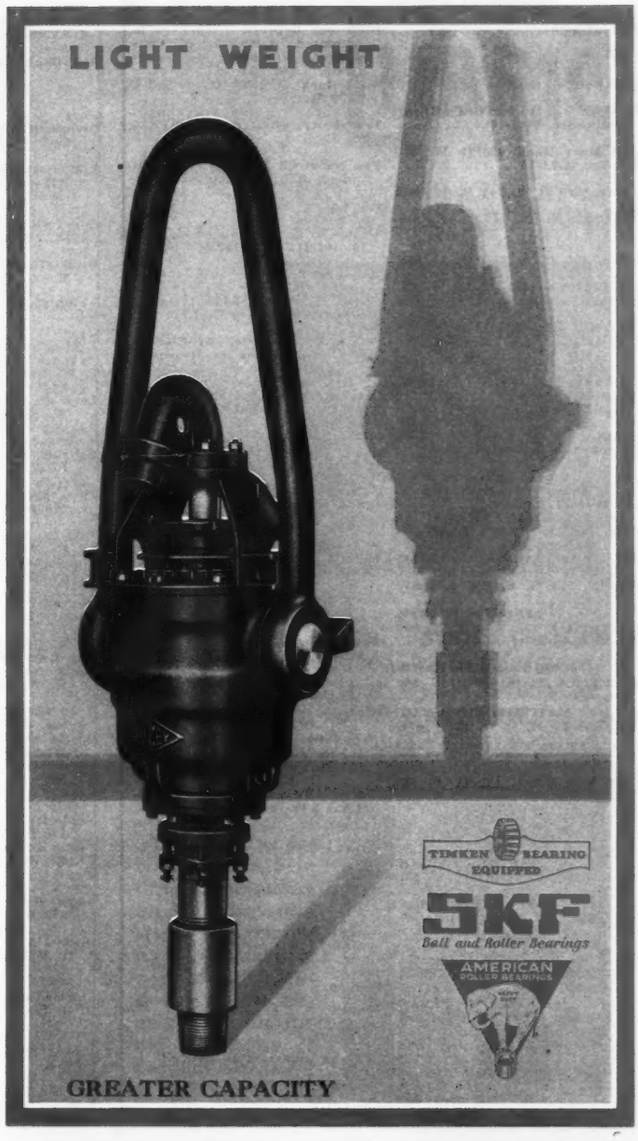
LUCEY OFFERS *The* SUPER SWIVEL

Designed to carry a load of more than 180 tons, the Lucey E-6500-A "Quad" Oil Bath Swivel is the answer to the Oil Industry's demand for a super-strong, super-smooth, super-safe swivel.

Four bearings, each designed for a special duty in the particularly heavy service to which the super-swivel is adapted, make the Lucey "Quad" Swivel the most advanced of its type in the fields today.

The upper thrust bearing is an SKF ball bearing, specially designed for pulling down attachments. The main load is suspended on a giant Timken Tapered Roller Bearing, and the two lower alignment bearings are American Heavy Duty Roller Bearings.

Besides the best in bearings, the E-6500-A "Quad" has numerous other features, including large diameter forged steel bail, extra heavy trunnions, great oil capacity, 3″ water course throughout, oversize stuffing boxes and many other salient features.



LUCEY
"WHEREVER — THERE'S OIL"

LUCEY PRODUCTS CORPORATION

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OKLAHOMA CITY, OK. DUNCAN, OKLA. MAUD, OKLA. SHREVEPORT, LA. HOUSTON, TEXAS LOS ANGELES, CALIF.

EXPORT
3505 WOOLWORTH BUILDING, NEW YORK CITY
54 OLD BROAD STREET, LONDON, E. C. 2, ENGLAND
55 RUE DE RIVOLI (1.ER) PARIS, FRANCE
PLOESTI, ROUMANIA
SAN FERNANDO, TRINIDAD, B. W. I.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 46)

National O. & G. Co.'s No. 1 Kirkland, 585 ft. E, 495 ft. N, SW cor., Sec. 35-9-1n.....Cmtd. 8-in. 2,000 ft; T.D. 2,100 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7.....S.D. 2,240 ft.

Leue Oil Co.'s No. 1 Taylor, 1,153 ft. S, 360 ft. W, C, Sec. 16-22-6.....S.D. 3,004 ft.

CONCORDIA PARISH

A. C. Glassell's No. 1 Pittsfield Plantation, N 9°, E 1,320 ft., SW cor., Sec. 41-8-10.....Blew out between 1,392-1,400 ft estimated 1,000,000 ft. gas bridged; arranging to ream 8¾-in. 1,370 ft

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e.....8-in. stuck at 1,300 ft; set; T.D. 2,320 ft.

DE SOTO PARISH

Benson Oil Co.'s No. 1 Harris, Sec. 6-10-13.....Tested dry; show gas; W.G. 2.6 ft.

Joe Burnham et al's No. 1 Mary Hood, 320 ft. W, 201 ft. S, NE cor. SE NE, Sec. 3-11-14.....Top Nacatoch 1,060 ft; S.D; waiting on D.S; T.D. 1,400 ft.

Sam Gold et al's No. 1 Platt, 200 ft. S, 200 ft. W, NE cor. SW, Sec. 23-13-14.....Rig up.

Gulf Ref. Co.'s No. 1 Dry, 2,390 ft. N, 200 ft. E, SW cor., Sec. 14-11-15.....Began drlg. July 3; cmtd. 15½-in. 107 ft; drlg. 187 ft.

Bud Harrell's No. 1 Horton, 450 ft. E, 150 ft. N, SW cor., Sec. 4-11-11.....S.D. 1,060 ft.

Frank Melat, Inc.'s No. 1 Schryver, 175 ft. E, 175 ft. N, SW cor. NW SW, Sec. 35-14-13.....Cored 5-ft. sand 2,775 ft; cmtd. 6⅝-in. 2,758 ft; T.D. 2,775 ft.

Michlouzanna O. & G. Co.'s No. 1 Payne, 410 ft. S, 398 ft. E, NW cor., Sec. 12-11-16.....O.W.D.D.; completed by Clark & Melat; arranging to deepen. T.D. 2,556 ft.

Odell & Lawton's No. 1 Tidwell-Tull, 300 ft. N, 600 ft. E, SW cor. NW, Sec. 11-13-14.....Top Nacatoch 1,236 ft; top chalk 1,500 ft; drlg. out base of chalk at 1,850 ft.

Pelham & Bumby's No. 1 Rhodes, C S½ SE, Sec. 32-13-14 Rig up.

R. O. Roy's No. 1 Nelson, 660 ft. S, 660 ft. E, NW cor., Sec. 36-15-13.....Drlg. 1,850 ft.

EAST CARROLL PARISH

La. Gas & Fuel Co.'s No. 1 Hicks, 1,320 ft. N, 759 ft. W, SE cor., Sec. 12-19-10.....Cmtd. 8⅛-in. 2,333 ft.

FRANKLIN PARISH

Davis et al's No. 1 Moore, 600 ft. W, 200 ft. S, NE cor., Sec. 12-11-6.....S.D. 1,430 ft.

JACKSON PARISH

El Dorado Chief O. & G. Co.'s No. 1 Sou. Advance Paper Bag Co., 225 ft. N, 275 ft. E, SW cor. SW NE, Sec. 35-15-4.....Drlg. 1,400 ft.

LINCOLN PARISH

Ark. Fuel Oil Co.'s No. 1 Lewis & Co., 300 ft. N, 300 ft. W, SE cor. NW SE, Sec. 26-20-4.....Top red beds 3,305 ft; drlg. hard broken lime 3,830 ft.

MOREHOUSE PARISH

Ruston Drlg. Co.'s No. 1 Tucker & Platt, 660 ft. N, 860 ft. W, SE cor. NE, Sec. 8-20-6.....Drlg. shale and boulders 2,240 ft.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10.....Began drlg. May 3; cmtd. 12¼ in. 150 ft; S.D. for title work; drlg. 937 ft.

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6.....Tested 1,000,000 ft. gas and S.W. 3 ft.; S.D. for orders; T.D. 2,52 ft.

Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E, SW cor. SE, Sec. 7-8-9.....S.D. 1,600 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e.....S.D. for fuel 2,650 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10.....Tested S.W. and show oil 6 ft sand 1,700 ft; drlg. shale 2,550 ft.

E. C. Lucas' No. 1 La. Pecan Co., Sec. 26-13-11.....Cmtd. 8-in. 785 ft.

Geo. L. Pace et al's No. 1 Clarkson, 200 ft. S, 200 ft. E, NW cor. NE, Sec. 30-12-9.....Rig up.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5.....Derrick.

Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6.....Waiting orders; T.D. 2,657 ft.

Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6.....Tested S.W.; W.O. 2,477 ft.

Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6.....Location.

Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6.....Derrick.

W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7.....Derrick.

Island Gas Co.'s No. 1 Noe, 1,902 ft. N, 660 ft. W, SE cor., Sec. 3-16-5.....Rig up.

Palmer Corp.'s No. 1 Seubert, 1,356 ft. N, 88° 35' W, 660 ft., SE cor., Sec. 1-16-5.....Began drlg. July 6; cmtd. 12½-in. 172 ft; drlg. 875 ft.

SABINE PARISH

Ark.-La. P. L. Co.'s No. 1 Whitney, 660 ft. S, 660 ft. E, C, Sec. 28-10-14.....S.D. 1,384 ft; repairing rig.

Boone, trustee's No. 1 J. B. Hill, NE, Sec. 4-6-11.....(No check). derrick.

Lohman & Walker's No. 1 Hubley, 330 ft. N, 330 ft. W, SE cor. SE NE, Sec. 21-7-11.....Rig up.

Longoria et al's No. 1 Belton, 330 ft. S, 330 ft. E, C, NE, Sec. 21-9-13.....Rig up.

Loring Oil Co.'s No. 1 Peavy-Wilson Lbr. Co., 200 ft. S, 330 ft. W, NE cor. SW NE, Sec. 21-6-13.....Coring shale and lime 4,100 ft.

Lohman et al's No. 1 Wyatt Lbr. Co., 150 ft. S, 330 ft. E, NW cor. NE SW, Sec. 18-4-11.....Rig up.

J. C. McDaniel & Lieber's No. 1 Batson, 675 ft. N, 318 ft. E. SW cor. SE, Sec. 16-18-12.....Show oil; bailed dry; W.O. 2,526 ft.

Paramount O. & G. Co.'s No. 1 Woolems, 330 ft. N, 330 ft. W, SE cor. NE NW, Sec. 11-6-12.....S.D. 1,656 ft.

D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12.....S.D. 3,280 ft.

San Miguel Oil Corp.'s No. 1 Blankenship, 660 ft. N. 660 ft. E, SW cor. SE, Sec. 20-9-11.....Derrick.

H. T. Stacey et al's No. 1 Polly, NE cor. NE NE, Sec. 18-8-12.....Rig up.

Teteco Oil Corp.'s No. 1 La. Long Leaf Lbr. Co., 325 ft. S. 100 ft. W, NE cor. NW, Sec. 18-6-12.....Show gas and S.W. 4,015 ft; reaming to bottom; T.D. 4,075 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12.....Drlg. 2,200 ft.

ARKANSAS

ASHLEY COUNTY

J. D. Marcum Co.'s No. 1 McGarry, 300 ft. W, 100 ft. S. C, Sec. 10-19-4.....O.W.D.D; old T.D. 3,300 ft; cmtd. 6⅝-in. 3,450 ft; broken sand 3,467-3,555 ft.

CALHOUN COUNTY

Tidal Oil Co.'s No. 1 Freeman-Smith Lbr. Co., 150 ft. C S line, NE NW, Sec. 3-16-14.....Drlg. 1,440 ft.

CLEBURNE COUNTY

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10.....Drlg. slate 3,810 ft.

Donnelly-Craver et al's No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9.....Fishing for bit; T.D. 1,475 ft.

COLUMBIA COUNTY

S. Y. Dorfman et al's No. 1 Merritt, 923 ft. S, 160 ft. W, NE cor. SE NW, Sec. 25-19-22.....Derrick; previously reported drlg. in error.

DREW COUNTY

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-5.....S.D.; W.O. 2,625 ft.

FRANKLIN COUNTY

Red Bank Oil Co.'s No. 1 Edtin, SW cor., Sec. 33-10-26..Tested 1,000,000 ft. gas 1,317 ft and 1,576 ft.; show gas and S.W. 2,155 ft; underreaming 10-in. at 2,215 ft; T.D. 2,385 ft.

GARLAND COUNTY

Givens et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19.....S.D.; W.O. 3,604 ft.

HOT SPRING COUNTY

J. R. Lockhart's No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 (Reported in Grant County in error.).....Derrick.

LAFAYETTE COUNTY

Crawford Drlg. Co.'s No. 1 Vaughn, 200 ft. S, 200 ft. W, NE cor. SE NE, Sec. 25-19-25.....Rig up.

LINCOLN COUNTY

B. F. Thompson, trustee's No. 1 McGehee, 330 ft. S, 150 ft. W, C, Sec. 8-8-7.....Rigging up.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32....Fishing bit and collar; T.D. 2,502 ft.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26.....S.D.; W.O. 3,610 ft.

MADISON COUNTY

J. W. Baxter's No. 1 Hallem, C NE SW, Sec. 17-16-26..Drlg. black shale 475 ft.

MILLER COUNTY

Lenz et al's No. 1 G. W. Johnson, 400 ft. S, 400 ft. W, NE cor. SW, Sec. 24-15-26.....S.D. 2,130 ft.

OUACHITA COUNTY

Anderson & Wimmer's No. 1 Buck, Sec. 7-15-17.....Sidetracking D.S.; T.D. 2,735 ft.

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17.....Began drlg. June 20; S.D.

PIKE COUNTY

Theo. Davis, trustee's No. 1 Ruth Wilson, 200 ft. S, 200 ft. W, NE cor., Sec. 25-5-26.....Fishing 700 ft.; S.O.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 J. E. Moore, 330 ft. N, 330 ft. E, SW cor. SE NE, Sec. 16-9-21.....Began drlg. July 5; drlg. 300 ft.

Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N. 660 ft. E, SW cor. NW SE, Sec. 13-9-19.....Drlg. lime 4,725 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26.....Tested show of gas 1,508 ft.; fishing cable tools; T.D. 1,530 ft.

SEBASTIAN COUNTY

W. M. Greeson's No. 1 Spears, Sec. 9-7-29.....Drlg. hard sand 2,868 ft.

Mansfield Gas Co.'s No. 14 fee, Lot 10, Sec. 1-4-31.....S.D. 200 ft.

Ozark Nat. Gas Co.'s No. 10 Weaver, 660 ft. N, 660 ft. W, SE cor. SE NE, Sec. 27-8-30.....Drlg. 1,400 ft.

UNION COUNTY

S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17.....Dry 1,987-2,079 ft.; fishing 2,157 ft.

Marine Oil Co.'s No. 4-A Thompson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 10-18-13.....Drlg. 1,700 ft.

Marine Oil Co.'s No. 3-B Winn, 330 ft. S, 330 ft. W, NE cor., Sec. 10-18-12.....Swbng; making occasional small heads of oil; 5 ft. sand; T.D. 3,559 ft.

Modisette Drlg. Co.'s No. 4 Union Sawmill, 300 ft. W, 300 ft. N, SE cor., Sec. 14-18-14.....Location.

South El Dorado Oil Co.'s No. 1 Traylor, 330 ft. N, 138 ft. W, SE cor. NW NE, Sec. 9-19-15.....W.O.S.R; 700 ft. fluid; T.D. 3,186 ft.

VAN BUREN COUNTY

Glenn Kohle et al, trustee's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13.....S.D. 50 ft.

WASHINGTON COUNTY

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32.....S.D.; W.O. 602 ft.

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30.....Trying to kill wtr. flow 2,150 ft.; hard sand showing oil 1,637-40 ft.

Lincoln Leaseholding, Synd.'s No. 1 Lincoln, Sec. 30-15-32 U.R. 8-in. to T.D. 1,500 ft.

H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29. Cmtd. 12½-in. 45 ft; S.D; W.O. 677 ft.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8.....Pulled 5 3/16-in.; S.D.; W.O.; T.D. 3,650 ft.

YELL COUNTY

Tegmeir & Luckett's No. 1 Falcon, Sec. 36-7-21.....Gas show 4,160 ft; waiting for string 5 3/16-in.

EAST TEXAS

BOWIE COUNTY

Lee Timberlake's No. 1 Tidwell, 2,800 ft. N, 300 ft. W, SE cor., Jos. Eskell Sur.....Coring 1,840 ft.

CAMP COUNTY

McDonald Bros.'s No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tract, in J. H. Murphy Sur.....Location.

Rogers et al's No. 1 Enfelt, R. M. Montgomery Sur.....T.A. 3,045 ft.

CASS COUNTY

Phillips Pet. Co.'s No. 1 J. R. Olds, 300 ft. N, 170 ft. E, SW cor. J. A. Stephenson Sur.....Rig up.

MARION COUNTY

W. D. Chew's No. 1 Fee, 2,350 ft. W, 1,275 ft. N, SE cor., W. J. Hamilton Sur.....Began drlg. June 30; cmtd. 12¼-in. 220 ft.

P. E. Hussey's No. 1 A. A. Trammell, Chas. Lockhart Sur.....Drlg. 110 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. ....S.D. 2,865 ft.

Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ....Swedging 2 jts. collapsed 8-in.; arranging cement 6⅝-in. and packer 2,182 ft.

SHELBY COUNTY

Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 1 McCann, D. G. Green Sur.....Coring hard lime and sticky shale 5,204 ft.

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur. ....S.D. fuel; T.D. 3,300 ft.

MISSISSIPPI

ALCORN COUNTY

Mcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e..Fishing 6-in. and tools 2,392 ft.; T.D. 2,735 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20-13-3.....Fishing 8¼-in. csg. 1,414 ft.

HINDS COUNTY

Oscar Brown's No. 1 Riverside (formerly Hennessee et al's), SE cor. SE SW, Sec. 23-16-5.....Set 12½-in. 30 ft.; S.D. 1,050 ft.

Cane River Oil Co.'s No. 1 Lufkin, Sec. 15-5-1e.....Began drlg. May 28; S.D. waiting on 12½-in. csg.; T.D. 406 ft.

Dome Oil Co.'s No. 1 Elton, NE cor. SE SW, Sec. 5-4-1e..Drlg. 1,387 ft.

Interior Oil Co.'s No. 1 Belhaven Heights, 1,165 ft. W, 614 ft. S, NE cor., Sec. 2-5-1e.....Derrick.

(Continued on Page 126)

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

	May 31, 1930	April 30, 1930	May 31, 1929
EAST OF CALIFORNIA:			
At refineries by location:			
East Coast: Domestic	9,370	8,646	9,367
Foreign*	4,650	5,203	6,594
Appalachian	3,079	3,105	2,645
Indiana, Illinois, Kentucky, Michigan, etc.	3,185	3,516	2,974
Oklahoma, Kansas and Missouri	5,760	5,473	6,034
Texas: Inland	2,428	2,226	2,464
Gulf Coast: Domestic	10,846	10,893	9,492
Foreign*	264	288	517
Arkansas and Inland Louisiana	993	1,034	1,470
Louisiana Gulf Coast: Domestic	4,252	4,194	3,391
Foreign	836	1,165	1,818
Rocky Mountain	1,827	1,645	2,075
Total	47,490	47,388	48,841
At refineries by origin:			
Pennsylvania grade	2,913	2,787	(†)
Other Appalachian (inc. Kentucky)	898	921	(†)
Lima-Northeast Indiana-Michigan	219	224	(‡)
Illinois-Southwest Indiana	138	127	(†)
North Louisiana and Arkansas	4,602	4,728	(†)
West Texas and Southeast New Mexico	4,732	4,160	(†)
Oklahoma, Kansas, North Texas, etc	17,988	17,639	(†)
Gulf Coast: Grade A	4,657	4,817	(†)
Grade B	3,742	3,650	(†)
Rocky Mountain	1,825	1,643	2,075
California	36	36	(†)
Foreign*	5,750	6,656	8,646
Total	47,490	47,388	48,841
Elsewhere than at refineries by origin:			
Pennsylvania grade	5,669	5,286	5,577
Other Appalachian (inc. Kentucky)	1,066	1,003	
Lima-Northeast Indiana-Michigan	995	894	854
Illinois-Southwest Indiana	10,159	10,206	11,128
North Louisiana and Arkansas	21,232	21,240	23,278
West Texas and Southeast New Mexico	49,781	51,994	245,093
Oklahoma, Kansas, North Texas, etc.	198,755	197,972	
Gulf Coast: Grade A	7,856	7,931	
Grade B	11,495	11,373	20,381
Rocky Mountain	24,421	24,588	24,390
Total	331,429	332,487	330,701
Total east of California	378,919	379,875	379,542
CLASSIFICATION BY GRAVITY (approx.):			
East of California: Light	340,207	339,586	332,011
Heavy	38,712	40,289	47,531
California: Light	42,912	44,166	30,451
Heavy (including fuel)	105,560	105,636	102,219
PRODUCERS' STOCKS (not included above; approx.):			
East of California: Seminole	496	473	568
Other	5,604	5,577	6,132
Total	6,100	6,050	6,700

*Includes importers' stocks. †Not available.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	May, 1930	April, 1930	Jan.-May, 1930	Jan.-May, 1929
Crude oil	3	....	3	491
Refined products	1,804	1,819	9,283	10,169
Gasoline	1,432	1,504	7,263	8,716
Kerosene	....	....	99	....
Gas oil	333	309	1,656	1,349
Diesel oil	....	....	144	20
Fuel oil	....	3	13	63
Lubricants	37	2	98	7
Asphalt	2	1	10	14

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

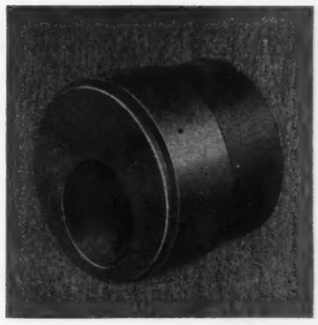
	May, 1930 Total	May, 1930 Dy.av.	April, 1930 Total	April, 1930 Dy.av.	Jan.-May, 1930	Jan.-May, 1929
CRUDE PETROLEUM:						
Runs to stills: Domestic	78,029	2,517	75,423	2,514	372,087	363,460
Foreign	5,618	181	5,011	167	24,823	32,983
Total	83,647	2,698	80,434	2,681	396,910	396,443
Imports	4,984	161	5,781	193	25,363	37,261
Exports	2,203	71	1,900	63	9,586	8,880
GASOLINE: Production*	39,293	1,267	38,157	1,272	185,780	172,760
Imports	1,768	57	1,319	44	6,488	2,783
Exports	4,953	160	5,731	191	27,039	23,164
Stocks†	54,046	....	54,435	....	54,046	44,672
Domestic demand	36,497	1,177	34,549	1,152	154,315	140,799
KEROSENE: Production	4,317	139	4,435	148	22,391	22,986
Imports	6	....	38	1	59	90
Exports	826	27	1,620	54	7,364	8,528
Stocks	8,384	....	8,068	....	8,384	7,742
Domestic demand	3,181	103	3,240	108	15,741	15,807
GAS OIL & DISTILLATE FUELS:						
Production	7,276	235	6,436	215	32,607	.....
Stocks	15,721	....	13,988	....	15,721	.....
RESIDUAL FUEL OILS:						
Production	26,685	861	25,800	860	130,099	.....
Stocks‡	20,943	....	19,662	....	20,943	.....
GAS OIL & FUEL OIL:						
Production	33,961	1,096	32,236	1,075	162,706	184,728
Imports	1,810	58	1,837	61	10,810	5,708
Exports	2,402	77	3,729	124	15,874	15,086
Stocks	36,664	....	33,650	....	36,664	35,636
LUBRICANTS: Production	3,185	103	3,193	106	15,105	14,295
Imports	2	....	2	....	11	14
Exports	864	28	994	33	4,362	4,662
Stocks	9,578	....	9,649	....	9,578	8,370
Domestic demand	2,394	77	2,116	71	9,445	9,617
WAX (thousands of pounds):						
Production	45,920	1,481	54,040	1,801	264,600	277,043
Imports	3,726	120	4,280	143	14,457	14,105
Exports	21,405	690	20,066	669	112,634	116,877
Stocks	248,524	....	241,853	....	248,524	179,139
Domestic demand	21,570	696	28,642	955	109,308	105,476
COKE (short tons):						
Production	170,400	5,497	150,600	5,020	786,700	666,600
Stocks	786,100	....	817,000	....	786,100	471,200
ASPHALT (short tons):						
Production	336,500	10,855	272,900	9,097	1,192,000	1,221,800
Stocks	316,800	....	292,800	....	316,800	236,300
ROAD OIL: Production	377	12	315	11	1,645	.....
Stocks	398	....	339	....	398	.....
MISCELLANEOUS: Production	535	17	349	12	2,283	3,773
Stocks	525	....	534	....	525	814

*Includes benzol production and natural gasoline used elsewhere than at refineries east of California. †Includes motor fuel blends held at natural gasoline plants. ‡East of California.

McCORD

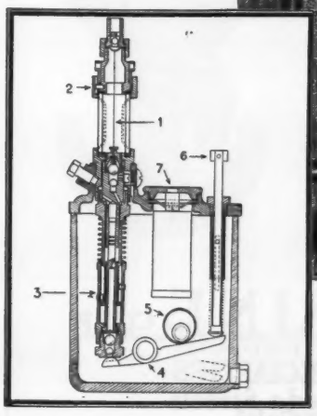
A BETTER LUBRICATOR

FREE ACTION AND LESS WEAR BETWEEN CAM AND ROCKER ARM



On the McCord "LF", there is no binding action between the cam and rocker arm. This is accomplished by means of a revolving sleeve which rolls the cam over the arm instead of the usual sliding action. Thus, by using this sleeve, friction is reduced to a minimum, eliminating the wear that would otherwise result from the cam rubbing and scraping against the arm at every stroke.

The operating eccentric (No. 5 in drawing below) is made from solid steel. Its simplicity, dependability and lasting qualities are just another reason for the popularity of the McCord "LF"



McCORD

RADIATOR & MFG. CO., DETROIT, MICH.

LUBRICATOR DIVISION

"SAFETY"

is the keynote of these noteworthy

LORRAINE-BUILT PRODUCTS!

The LORRAINE *Automatic* TUBING SPIDER

Runs any size tubing—and the longest, heaviest strings—with ease, speed and absolute safety. Accidents are prevented by an ingenious device which positively stops falling tubing. Solid, all-steel, accurately machined base and bowl eliminate the hazard of split spiders. All moving parts are designed to prevent binding, hang-ups or the loss of any parts of the Spider in the well. Write for full information.

The LORRAINE *Handcuff* TUBING HOOK

Great strength and an individual hook for each elevator link are features of the Lorraine all-steel Handcuff Tubing Hook which insure the highest possible degree of safety in handling tubing. Each of the hooks has sufficient strength to carry the entire load, should an elevator link or one of the hooks part. Elevator links are easily attached to, or removed from, the tubing hook, but when snapped in place cannot become unhooked accidentally. Write for further particulars.

THE LORRAINE CORP.
MANUFACTURERS AND DISTRIBUTORS
OIL WELL SPECIALTIES
115th and Alameda Streets
Los Angeles, Calif.

Mid-Continent Distributors:
The National Tank Co.,
Tulsa, Oklahoma

Export Distributors:
American Steel Export Co., Inc.,
295 Madison Ave., New York

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 45)

DOUGLAS COUNTY
Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21..Shut down 1,100 ft.
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17 ..Shut down 1,800 ft.

EDWARDS COUNTY
Dixie and Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w .....Water 4,647-90 ft.; shut down 5,100 ft.; plugging back to 4,482-92 ft.

ELLIS COUNTY
Central Commercial Oil Co.'s No. 1 Helms, SE cor. NE Sec. 2-12-20w .....Drlg. 2,964 ft.
Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Shut down 3,500 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w .....Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Shut down 3,665 ft.

ELK COUNTY
Croft & Frazier's No. 1 Keys, SE NE Sec. 26-31-10 ....Rig.

ELLSWORTH COUNTY
Slick et al's No. 1 Unknown, NW cor. Sec. 25-17-10w ....Rig.

FORD COUNTY
McNabb et al's No. 1 Fowler, C SE Sec. 26-27-22w ....Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ....Drlg. 3,575 ft.

GOVE COUNTY
Varelius & Baucher Oil Co.'s No. 1 Todd, NW cor. Sec. 24-13-27w .....Drlg. 1,500 ft.

GRAHAM COUNTY
Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w..Shut down 4,370 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w..Drlg. 4,370 ft.

GRANT COUNTY
McKenna et al's No. 1 Sullivan, NE cor. Sec. 12-29-38w..Shut down 50 ft.

GREENWOOD COUNTY
Staats et al's No. 1 Swan, NE NW Sec. 3-25-12 .....Rig.
Mid-Continent Pet. Corp.'s No. 1 Griss, NW SW Sec. 33-25-13 .....Drlg. 500 ft.
Harwood Oil Co.'s No. 1 Log, SW NE Sec. 20-25-10 .....Rig.
Mallory's No. 1 Denchfield, SE NW Sec. 12-27-9 .....Drlg. 1,810 ft.
Bundy, Smith & O'Neil's No. 1 Ford, NE NW Sec. 28-25-13 .....Shut down 50 ft.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down 1,836 ft.

HARPER COUNTY
Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 1,830 ft.

KIOWA COUNTY
Phillips-Prairie's No. 1 Bean, NE SE Sec. 10-30-17w ....Fishing 2,775 ft.
McKenna et al's No. 1 Raison, C NE Sec. 14-28-20w ....Rig.

LYONS COUNTY
Griffith et al's No. 1 King, NW cor. Sec. 8-19-10 .....Drlg. 500 ft.

MARION COUNTY
Magnolia Pet. Co.'s No. 1 Davis, SE NW Sec. 18-21-2 ....Spudding.
Dixie and Arkansas Fuel's No. 1 Hacker, NW NE Sec. 6-17-1 .....Spud; shut down.
Empire Oil & Ref. Co.'s No. 1 Hiebert, SE SW SE Sec. 20-20-2 .....Drlg. 2,690 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.

MARSHALL COUNTY
Swicker & Sincox's No. 1 Remple, C N half NW Sec. 22-4-9 .....Shut down 1,000 ft.
Brazier et al's No. 1 Runkel, SE NW Sec. 13-2-6 .....Shut down 50 ft.

McPHERSON COUNTY
Simmons & Canary's No. 1 Bishop, NW SW Sec. 15-18-1w .....Drlg. 2,090 ft.
Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w .....Rig.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w .....Abandoned 3,575 ft.

MIAMI COUNTY
Clark's No. 1 Vaughn, SE SW Sec. 28-17-22w .....Drlg. 1,200 ft.

MORTON COUNTY
Argus Prod. Co.'s No. 1 Morgan, C NW Sec. 8-33-39w....Rig on ground.
McNabb et al's No. 1 Rickart, C SE Sec. 5-35-39w .....Drlg. 2,546 ft.
Argus Prod. Co.'s No. 2 Chambers, C SE Sec. 21-34-39w ..Rig; abandoned.
Argus Prod. Co.'s No. 1 Mangels, C NW Sec. 4-34-39w...R.U.S.T. 2,592 ft.
Argus Prod. Co.'s No. 1 Tillet, C SW Sec. 21-34-39w .....Rig.
Argus Prod. Co.'s No. 1 Sullivan, C NW Sec. 29-34-39w ...Rig.
Argus Prod. Co.'s No. 1 Burton, C SE Sec. 11-33-40w .....Drlg. 583 ft.
Argus Prod. Co.'s No. 1 Mangels, C SE Sec. 4-33-39w ....Drlg. 2,527 ft.
Argus Prod. Co.'s No. 1 Morgan, C SW Sec. 6-33-39w .....Drlg. 1,660 ft.
Argus Prod. Co.'s No. 1 Mangels, C SW Sec. 19-33-39w ...Drlg. 2,557 ft.
Argus Prod. Co.'s No. 1 Mangels, C NE Sec. 20-33-39w ...Drlg. 1,990 ft.
Argus Prod. Co.'s No. 2 Haywood, C NW Sec. 21-33-39w ..Drlg. 2,575 ft.
Argus Prod. Co.'s No. 1 Garner, C SE Sec. 18-33-39w ....Rig on ground.
Argus Prod. Co.'s No. 1 Dreibelbis, C NE Sec. 9-34-39w...Drlg. 2,850 ft.
Argus Prod. Co.'s No. 1 Watson, C NE Sec. 27-34-40w ....Drlg. 550 ft.
Argus Prod. Co.'s No. 1 Thompson, C SW Sec. 7-34-39w ..Comp. 2,528-2,900 ft.; 2,000,000 ft. gas.
Argus Prod. Co.'s No. 1 Rolla State Bank, C NW Sec. 8-34-39w .....Fishing 2,650 ft.
Argus Prod. Co.'s No. 1 Hayward, C SW Sec. 9-34-39w ...R.U.S.T. 2,600 ft.
Argus Prod. Co.'s No. 1 Thompson, C NW Sec. 18-34-39w..Drlg. 1,915 ft.
Argus Prod. Co.'s No. 1 Darth, C NE Sec. 20-34-39w .....Drlg. 2,468 ft.
Argus Prod. Co.'s No. 1 Chambers, C NW Sec. 25-33-40w..Comp. 2,568-2,856 ft.; 6,500,000 ft. gas.
Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-24-43w .....Drlg. 1,700 ft.; gas at 1,200-10 ft. and at 1,350 ft.

MORRIS COUNTY
Henderson et al's No. 1 Selsman, SW SE Sec. 24-16-9 ..Rig.
Urschell et al's No. 1 Scott, NE NW Sec. 6-16-6 .....Drlg. 2,300 ft.

OSAGE COUNTY
Riggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15 ....Drlg. 410 ft.

PAWNEE COUNTY
Skelly Oil Co.'s No. 1 Milhouse, C SE Sec. 34-23-17w ....Drlg. 4,600 ft.

PRATT COUNTY
Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w .....Shut down 4,005 ft.

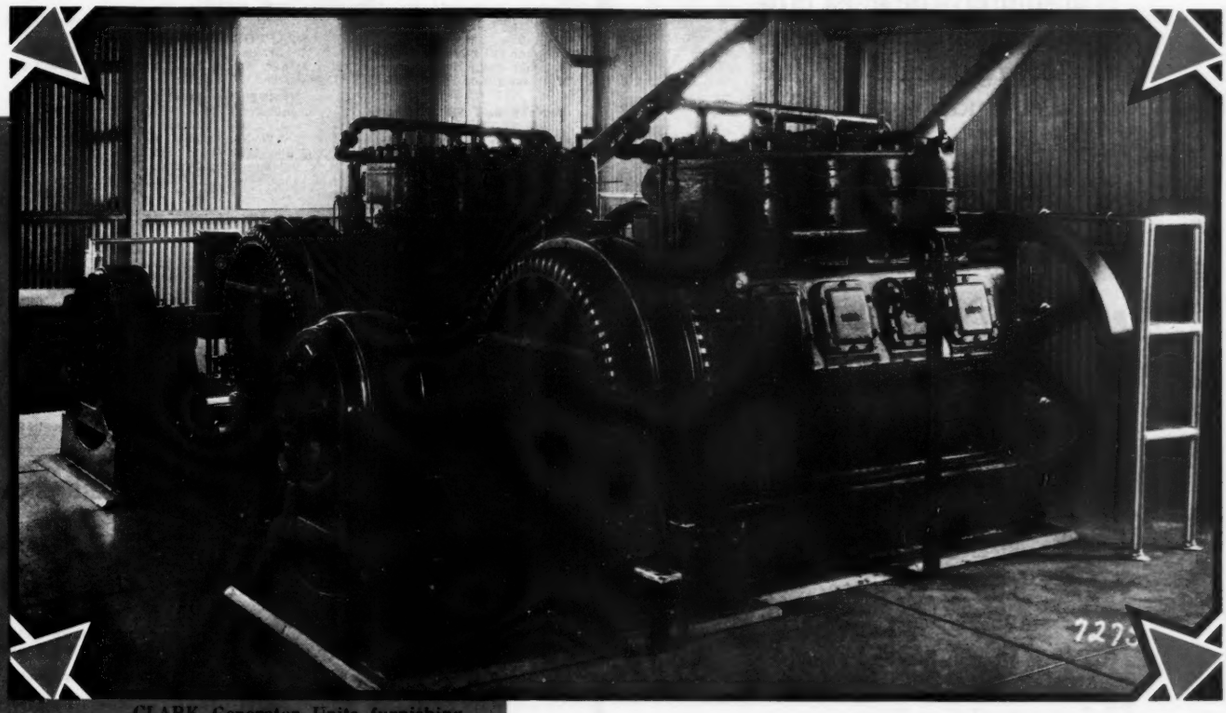
RENO COUNTY
E. L. Study and H. L. Turner's No. 1 Haury, NE SW Sec. 1-23-4w .....Drlg. 1,700 ft.
Phillips Pet. Co. and Tom Palmer's No. 1 Harsch, NE SE Sec. 14-26-5w .....Drlg. 2,940 ft.
United Pet. Co.'s No. 1 Houston, NW cor. Sec. 4-22-10w..Drlg. 200 ft.
C. A. Cheney and M. M. Valerius' No. 1 Stevens, C NE SE NE Sec. 6-26-7w .....Drlg. 3,580 ft.

RICE COUNTY
Gypsy Oil Co.'s No. 1 Koch, SE NE NW Sec. 35-20-9w....Rig.
Hershey Golden & Skelly's No. 1 Brandenstein, Sec. 10-19-10w .....Rig on ground.
McPherson and Shell's No. 1 Jennings, NE SW NW Sec. 29-18-6w .....Drlg. 2,815 ft.
Miller & Brown's No. 1 Schartz, Sec. 14-20-10w .....Drlg. 2,640 ft.
Hoffner, Lee & Shell's No. 1 Slad Farm Corp., C SW Sec. 33-19-6w .....Fishing 2,020 ft.
Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Drlg. 2,295 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Shut down 3,498 ft.
McCulloch et al's No. 1 Williams, C NE Sec. 35-20-8w ...Drlg. 3,770 ft.

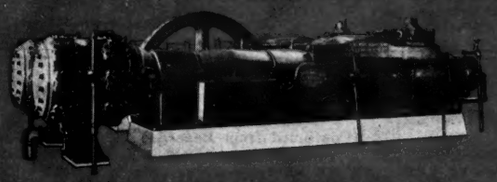
ROOKS COUNTY
A. H. Kruger's No. 1 Steis, NW SE SW Sec. 12-9-16w ..Shut down 570 ft.
Streater-Stearn's No. 1 Conger, SE NW NE Sec. 16-10-16w .....Spudding.

RUSH COUNTY
Prairie et al's No. 1 Lecker, NW SW SW Sec. 5-16-18w..Drlg. 355 ft.
Syndicate Oil Co.'s No. 1 Lannen, C SW Sec. 11-18-16w ..Location.
McPherson O. & G. Co.'s No. 1 Brack, C NW Sec. 24-17-16w .....Drlg. 1,895 ft.

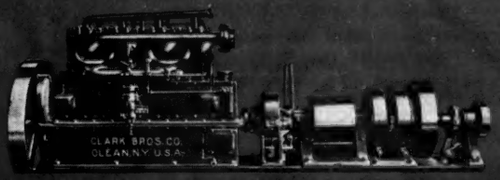
CLARK GAS ENGINE DRIVEN GENERATOR UNITS



CLARK Generator Units furnishing auxiliary power for Consolidated Gas Co., Wichita, Kas.



CLARK 400 H.P. Double-Acting Engine Driven Compressor Unit.



CLARK 90 H.P. Slow Speed Drilling Engine with Type G 2-Speed Clutch.

CLARK BROTHERS COMPANY

OLEAN, N. Y.

Export Offices: 150 Broadway, New York, N. Y. Mid-Continent Sales Offices: Tulsa and Fort Worth. Warehouses: Tulsa, Okla.; McCamey and Sweetwater, Texas; Artesia, N. M. California: Smith, Booth, Usher Co., 238 S. Central Ave., Los Angeles.

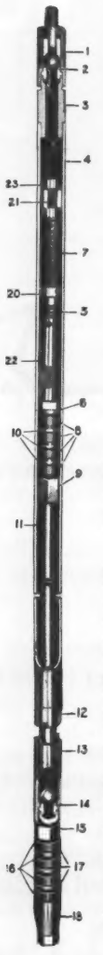
This unit enables operators to turn cheap gas into economical and dependable electric power. Consists of 90 H. P. CLARK gas or gasoline Engine direct connected to Generator—75 k.v.a.—400 R.P.M.—usually 480 v.—3 phase—60 cycle—with direct connected exciter.

Balanced . . . Quickly set up . . . Accessible . . . Durable.

CLARK

Ask the man who uses HOUGH DUO PUMPS—

and he will tell you that it is absolutely the most efficient trouble-proof liner working barrel on the market and that its performance cannot be duplicated in wells where there exists an abundance of sand.



1—Steel Upper Crown.
2—Steelex Ball and Seat.
3—Steel Upper Tube Connection or seat Frame.
4—Seamless Steel Outer Tube.
5—Steel Spring.
6—Steel Cup Nut.
7—Hydraulic Packing.
8—Vulcanized Cups.
9—4-Cup Steel Plunger Valve Body.
10—Steel Cup Rings.
11—Steel Plunger or Inner Tube.
12—Steel Lower Bushing.
13—Steel Closed Crown Tapped for Plunger Tube.
14—Steelex Ball and Seat.
15—Steel Valve Body.
16—Leather Cups.
17—Steel Cup Rings.
18—Steel Anchor Bottom.
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20—Steel Reversible Follower.
21—Seamless Steel Tube Body.
22—Steel Valve Connection or Guide.
23—Steel Reversible Bottom.

Huf-Duo Pump

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THE CHARLES N. HOUGH MFG. CO.
FRANKLIN, PENNA.

Syndicate Oil Co.'s No. 1 Mohr, C SW Sec. 2-18-16w .... Drlg. 1,825 ft.
Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w .... Total depth 3,606 ft.; shut down.

RUSSELL COUNTY

Streater & Stearns' No. 1 Mitchell, SE cor. Sec. 6-15-14w.. Spudding.
Empire O. & R. Co.'s No. 1 Herbel, NW NE SW Sec. 26-14-14w .... Drlg. 490 ft.
Slick et al's No. 1 Berrick, SE SW Sec. 23-15-13w ..... Drlg. 2,420 ft.
Empire and Prairie's No. 2 Ochs, SE NE Sec. 23-15-14w.. Drlg. 2,535 ft.
Austin Drlg. Co.'s No. 1 Rochfellow, SE cor. Sec. 6-13-12w .... Drlg. 800 ft.
Imo O. & G. Co.'s No. 1 Wambley, SE NW NE Sec. 7-14-14w .... Abandoned 3,328-30 ft.; water.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w .... Shut down 1,010 ft.

SEDGWICK COUNTY

Newman et al's No. 1 Bawly, SE NW NE Sec. 2-27-2 .... Drlg. 1,625 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w .... Shut down 975 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .... Shut down 1,725 ft.
Dixie Oil Co.'s No. 1 Miller, NE SE SE Sec. 9-16-3w .... Abandoned Wilcox 3,520-55 ft.; water.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 .... Shut down 985 ft.

STAFFORD COUNTY

Boucher Oil's No. 1 Christenson, NW cor. Sec. 22-22-11w.. Drlg. 2,290 ft.
Boucher Oil's No. 1 Groves, NE cor. Sec. 9-22-11w ..... Fishing 2,050 ft.
Midwest's No. 36 Richardson, SE cor. Sec. 36-22-12w .... Drlg. 2,838 ft.

STEVENS COUNTY

McNabb and Mid-Kansas' No. 1 Rhinehart, C NE Sec. 23-32-39w .... Rig.
Barrington et al's No. 1 Creamer, C NW Sec. 2-35-39w.. Drlg. 1,405 ft.
Argus Prod. Co.'s No. 1 Irwin, C SE Sec. 10-35-39w ..... Rig.
Argus Prod. Co.'s No. 1 Ratcliff, C SE Sec. 8-33-37w .... Drlg. 2,228 ft.
McNabb et al's No. 1 Porter, Sec. 4-31-37w .... Spudding.
Argus Prod. Co.'s No. 1 Shaffer, C SE Sec. 6-35-38w .... Drlg. 1,770 ft.
Argus Prod. Co.'s No. 1 Stone, C NE Sec. 3-33-39w ..... Drlg. 2,505 ft.
Agate Oil Co.'s No. 1 Gregory, NW SE Sec. 19-33-38w .... Shut down 2,135 ft.
Argus Prod. Co.'s No. 1 Libon, C NE Sec. 2-34-39w ..... Drlg. 625 ft.
Argus Prod. Co.'s No. 1 Roach, C NE Sec. 34-32-38w .... Drlg. 2,760 ft.
Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-39w .... Drlg. 600 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .... Shut down 1,600 ft.

SUMNER COUNTY

Magnolia Pet. Co.'s No. 1 Shriver, NW SW Sec. 9-33-2 .... Drlg. 1,075 ft.
Disney et al's No. 1 Fay, C E half SE Sec. 14-34-1w .... Rig.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .... Rig.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 .... Drlg. 510 ft.

WOODSON COUNTY

Sheedy et al's No. 1 Reed, SW SE SW Sec. 26-23-14 .... Shut down 1,595 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .... Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w .... U. R. 5-in. csg.; T. D. 4,265 ft.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW NW Sec. 28-1n-22w .... Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w.. Shut down 3,250 ft.

PHELPS COUNTY

Trees Oil's No. 1 Bergan, Sec. 22-6-19w .... Rig on ground.

RICHARDSON COUNTY

Norton et al's No. 1 Albin, NE cor. Sec. 26-1-14 .... Miss. lime 2,200 ft.; landing 8-in. casing.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w .... Drlg. 900 ft.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 2-1n-11w .... Shut down 555 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 44)

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 8-3-10w .. Rig.
Shasta Oil Co.'s No. 1 Romwalt, SW NW Sec. 11-2-10w .. Drlg. 1,050 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w .... Shut down 1,450 ft.
Green et al's No. 1 Wilson, C NE SW Sec. 14-1-12w .... Shut down 4,055 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w .... Drlg. 5,805 ft.
E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w .... Shut down 5,580 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .... Shut down 100 ft.
J. M. Henry et al's No. 1 Abraham, SE cor. NW Sec. 4-5-8w .... Rig.

GRANT COUNTY

Cowden et al's No. 2 Vollmer, CEL NE SW Sec. 22-25-4w. Shut down 5,640 ft.

GARVIN COUNTY

McMinn et al's No. 1 Carson, NE NW Sec. 5-3-4w ..... Rig.
Nelson et al's No. 1 Strickland, NE SW Sec. 10-4-3w .... Drlg. 2,880 ft.

GREER COUNTY

I. T. I. O. et al's No. 1 fee, C SW NE Sec. 17-6-24w .... Shut down 2,290 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w .... Drlg. 2,140 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w.. Shut down 625 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w ..... Fishing 5,570 ft.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w .... Fishing 8,583 ft.

HASKELL COUNTY

Mid-Western's No. 1 Poister, C NE SE Sec. 33-10-22 .... Shut down 3,200 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e ... Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e.. Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 ..... Drlg. 1,270 ft.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 ..... 1,000,000 ft. gas 2,284 ft.; drlg. 3,768 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 ..... Drlg. 3,982 ft.

KAY COUNTY

Alco Royalty Co.'s No. 1 Wolf, SE SW SE Sec. 34-26-2w.. Drlg. 2,720 ft.
Blankenship Petroleum Co.'s No. 1 Hansen, SW NW SW Sec. 17-27-2 .... Drlg. 2,760 ft.

KINGFISHER COUNTY

Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w ..... Shut down 6,015 ft.

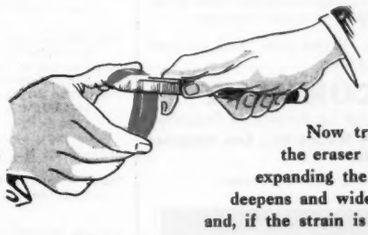
no expansion strains in EMSCO FREE-CIRCULATION PROTECTORS

At no time—during process of manufacture—while being installed—or while in or out of service, are Emsco *Free-Circulation* Protectors subjected to the slightest expansion strain. Therefore, they cannot be seriously damaged by ordinary cuts or tears, which render expanded rubber valueless almost immediately.

Emsco Protector rubbers are made flat, in shallow molds, under 200 tons direct pressure by hydraulic rams, and cured in a flat position while under this tremendous pressure to give it a solid structure and the ultimate in toughness and strength. When the Protector is placed on the pipe, *the rubber is still in a flat condition*—and not expanded, even though it is around the drill pipe. The steel cage locks it firmly on the pipe. It cannot slip, pile, overlap, or snap off the pipe at any time. The rubber bumpers slide freely without suction or friction and last indefinitely. Write for illustrated folder containing complete information.

Try This Simple Experiment Before You Select Any Kind of Drill Pipe Protectors

Take an ordinary, flat rubber eraser and make a slight cut in its surface. As long as the eraser is left in a *flat position* the cut doesn't do any particular damage.



Now try the same experiment while the eraser is bent tightly in a half circle, expanding the rubber. The cut immediately deepens and widens under the expansion strain and, if the strain is continued, the rubber breaks.

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No. 7 For opening drains. For cleaning caked and extra dirty concrete floors.

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KIOWA COUNTY
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w. Shut down 1,535 ft.

LEFLORE COUNTY
Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 .. Drlg. 5,750 ft.

LATTIMER COUNTY
Linestone Oil & Gas Co.'s No. 1 Murray, NE cor. Sec. 25-5-18 .... Shut down 1,450 ft.
Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .... Drlg. 3,530 ft.

LINCOLN COUNTY
J. J. Deaner et al's No. 1 Knox, NE NW Sec. 28-17-2.... Drlg. 2,980 ft.
Atlantic Oil Prod. Co.'s No. 1 Parker, SE NW Sec. 5-14-6 .... Drlg. 1,375 ft.
Magnolia Pet. Co.'s No. 1 Winship, NE SW Sec. 2-13-4 .. Drlg. 3,725 ft.
Tom Slick Oil Co.'s No. 1 Hammer. SE NW NW Sec. 35-16-2 .... Drlg. 5,595 ft.

LOGAN COUNTY
Slick & Ramsey's No. 1 Jones, SE NW Sec. 24-17-2w .... Location.
Prairie and Slick's No. 1 Morgan, NW NE Sec. 33-16-1w .... Drlg. 4,936 ft.
Eason Oil Co.'s No. 1 Young, C SW NE SW Sec. 34-17-4w. Fishing 1,150 ft.

McINTOSH COUNTY
Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .... Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MURRAY COUNTY
Chieftain Royalty Corp.'s No. 1 Hendrix, SW SE NW Sec. 27-2-2 .... Fishing 1,920 ft.

MUSKOGEE COUNTY
Becker & Hutchinson's No. 1 May, SE NE, Sec. 16-12-19.. Rig.
Mid-Western Oil Co.'s No. 1 Lacey, NW NE, Sec. 31-12-19 Spudding.
Hansen et al's No. 1 Johe, NW SW NE Sec. 12-15-18 .... Abandoned 1,090 ft.
H. E. Williams' No. 1 Robbins, NW SW NW Sec. 13-15-18 .... Shut down 1,000 ft.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ... Shut down 1,011 ft.

NOBLE COUNTY
Weaver & Craigin's No. 1 Frederick, C SW NE Sec. 4-24-1w .... Drlg. 2,020 ft.
Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w.. Drlg. 5,436 ft.

OKFUSKEE COUNTY
Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .... Drlg. 3,140 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .... Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10.. Shut down 3,661 ft.

OKLAHOMA COUNTY
Cromwell-Franklin's No. 1 Lincoln Park, SW cor. Sec. 12-12-3w .... Drlg. 1,000 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .... Drlg. 3,450 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Messer, SW cor. Sec. 32-14-3w .... Drlg. 5,300 ft.
Prairie and Slick's No. 1 Dill, SE NW Sec. 17-13-3w .... Drlg. 6,640 ft.; show gas.
Warr et al's No. 1 Castle, SW NW Sec. 20-11-3w .... Shut down 6,217 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .... Fishing 6,532 ft.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .... Drlg. 6,845 ft.
Ryan Consolidated's No. 1 Lawton, NE NW Sec. 3-11-2w.. Drlg. 6,679 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .... T. D. 6,971 ft.; water; plugging back 3,250 ft. to test.

OSAGE COUNTY
Western American Oil Co.'s No. 1, NW SE Sec. 28-23-6 .. Drlg. 1,500 ft.

PAWNEE COUNTY
L. E. Wentz' No. 1 G. Lilly, SE SW NE Sec. 26-22-3 .... Drlg. 810 ft.
Flynn & Morgan's No. 1 Jones, SW NE Sec. 22-20-5 .... Drlg. 1,100 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 .... Rig.

PITTSBURG COUNTY
Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .... Fishing 3,975 ft.

POTTAWATOMIE COUNTY
The Texas Company's No. 1 Knight, SW SE Sec. 3-8-3 .. Rig on ground.

ROGER MILLS COUNTY
Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w .. Shut down 2,245 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w .... Shut down 2,905 ft.

SEMINOLE COUNTY
Pure Oil Co.'s No. 1 Shaffer Ashby, SE NE Sec. 22-7-5.. Drlg. 3,880 ft.
T. Adkins et al's No. 1 McGilbray, SE NE Sec. 4-8-8 ... Drlg. 3,530 ft.
Magnolia and Twin State Oil Co.'s No. 1 Harns, SW NE NE Sec. 8-5-6 .... Drlg. 3,495 ft.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 35-5-5 ..... Location.

WASHITA COUNTY
Petroleum Holdings, Inc.'s No. 1 Musie, NW cor. Sec. 10-9-20w .... Shut down 280 ft.

WOODS COUNTY
Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w .... Shut down 6,164 ft.
Gypsy-Prairie et al's No. 1 Thompson, SE cor. SW Sec. 10-28-15w .... Shut down 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w .... Cleaning out 6,790 ft.

WOODWARD COUNTY
Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-22-17w .... Shut down 1,387 ft.
Prairie Oil & Gas et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .... Drlg. 7,411 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .... Shut down 1,910 ft.

OKLAHOMA PANHANDLE
CIMARRON COUNTY
Magnolia's No. 1 School Land, C SW NE Sec. 27-5-5 .... Drlg. 2,735 ft.

TEXAS COUNTY
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-18e .... Spudded; shut down.

SOUTHERN OKLAHOMA
ATOKA COUNTY
Bryant-Croxton's No. 1 Mason, NW SE NW Sec. 4-1s-14.. Shut down 1,850 ft.
Brookshire's No. 1 Guinn, NW cor. Sec. 18-3s-10 .... Shut down 100 ft.

BRYAN COUNTY
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .... Shut down 525 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e .. Drlg. 400 ft.
Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 ..... Shut down; 6-in. csg. 265 ft.

CARTER COUNTY
Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .... Shut down 2,590 ft.

CHOCTAW COUNTY
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6s-19e .... Shut down 1,346 ft.

COMANCHE COUNTY
Pelwin Oil Co.'s No. 1 Tafepirdy, C NW NE NE Sec. 5-1s-9w .... Drlg. 1,826 ft.

COTTON COUNTY
H. J. Dillard's No. 1 McMillan, SE NW Sec. 2-4s-13w.... Location.

LOVE COUNTY
Hobbs et al's No. 1 Roberts, NE cor. SW Sec. 20-6s-3w .. Drlg. 3,130 ft.
Gilcrease Oil's No. 1 Burkhart, NE NW Sec. 13-6s-1 .... Rig.

MARSHALL COUNTY
Pace et al's No. 1 Hicks, SW NW Sec. 8-6s-7 ..... Drlg. 390 ft.
Walker et al's No. 1 Parks, NW NE NW Sec. 5-5s-5 .... Drlg. 650 ft.
McCrory et al's No. 1 Adams, NE SW SE Sec. 31-7s-6 .... Rig.
Akers et al's No. 1 Spicer, SW SE SE Sec. 33-5s-7e .... Drlg. 370 ft.

McCURTAIN COUNTY
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 ..... Shut down 2,287 ft.

STEPHENS COUNTY
R. Southard's No. 1 McKinney, NE cor. Sec. 25-1-8n .... Shut down 1,060 ft.
Wirt Franklin Petroleum Corp.'s No. 1 McPhail, NW SE Sec. 1-2s-7w .... Total depth 4,529 ft.; to test.

KANSAS FIELDS

(Continued from Page 45)

is a rig. Lewis Production Co. and Shell Petroleum Corp.'s No. 1 Headley, SE cor., Section 19-31-6, has been completed for 100 bbls. in sand 2,866-2,923 feet.

Coffey County

Linn Oil & Gas Co. moved a machine in for No. 3 Barngrower, SW cor. NE NW, Section 7-23-15. Selby Oil & Gas Co.'s No. 4 Scott, NW cor. SE SW, Section 13-23-14, has been abandoned at 1,650 feet.

Chase County

Urschell and others' No. 1 Lipps, NE cor. SE, Section 27-18-6, is dry and abandoned at 2,315 feet. Steinbuchel and others' No. 1 Cook, NE cor. SW SW, Section 31-19-8, is dry and abandoned at 2,962 feet.

Dickinson County

Bryan & Emery, Inc.'s No. 1 Heuner, NW cor. SE, Section 31-13-3, has been abandoned at 3,065 feet.

Greenwood County

York State Oil Co. made location for No. 1 Lefever, NE cor. NW NE, Section 14-23-11. Empire Oil & Refining Co. has the rig up for No. 10 Patterson "C," SE cor. SW SE, Section 36-23-11. Empire Oil & Refining Co.'s rig is up for No. 4 Nesbit, NW cor., Section 6-24-12. Ritchey Drilling Co. made location for No. 1 Dunlop, SE cor. SW NE, Section 9-25-9. Skelly Oil Co. and Tidal Oil Co.'s No. 22 Wick, SE cor. SW, Section 27-22-11, has been completed for 90 bbls. in sand 1,935-47 feet. Simmons & Leonard's No. 1 Luthi, NE cor. NW NW, Section 32-22-13, is dry and abandoned at 1,723 feet. McGinnis and others' No. 5 Mack "B," NW cor. SW NE, Section 36-24-10, made 200 bbls. in sand 1,835-97 feet. Aladdin Petroleum Co. and Phillips Petroleum Co.'s No. 3 Jones, SE cor. NW, Section 36-24-10, has been completed for 200 bbls. in sand 1,875-1,906 feet. Derby Oil Co.'s No. 2 Beavers, SW cor. NW SE, Section 25-24-12, is dry and abandoned at 1,731 feet. No. 4 Beavers, CWL SW SE, Section 25-24-12, has been completed for 1,250,000 feet of gas in sand 1,616-20 feet.

Lyon County

Sheedy and others' No. 1 Pyle, NE cor., Section 1-20-10, is dry and abandoned at 2,114 feet.

Marion County

Stearns & Streeter's No. 1 McNichol, NW cor. NE NE, Section 15-17-4, is a rig going up. Youkers and others' No. 2 Riffel, SW cor. SE SE, Section 10-17-4, has been completed for 75 bbls. in chat 2,343-65 feet. National Refining Co.'s No. 16 Reamey, CNL S half SE, Section 17-21-4, has been completed for 150 bbls. in chat 2,427-37 feet.

McPherson County

Milmac and others' No. 1-A Decker, NW cor., Section 11-20-3w, is dry and abandoned at 3,575 feet. Sinclair Oil & Gas Co.'s No. 1 McCurdy, SE cor., Section 33-20-3w, made 972 bbls. in Silicious lime 3,369-72 feet. No. 10 Morehouse, NE cor. NW NE, Section 4-21-3w, has been completed for 1,365 bbls. in Wilcox sand 3,277-3,305 feet.

Reno County

Tatlock and Shell Petroleum Corp. and others' No. 1 Tonn, C NW NW, Section 17-25-4w, made 292 bbls. in sand 3,605-11 feet.

Rice County

Boucher Oil Co.'s No. 1 Boy, SW cor., Section 16-21-10w, is an old well rigging up to deepen from 2,553 feet.

Saline County

Dixie Oil Co.'s No. 1 Miller, NE cor. SE SE, Section 9-16-3w, has been abandoned at 3,555 feet.

Sedgwick County

E. F. Jones and others made location for No. 1 Rinel, SW cor. NW SW, Section 20-27-2. Vickers Petroleum Co. and others' No. 2 Keys, NW cor. NE, Section 30-27-2, is moving in. Wentz Oil Corp.'s No. 1-A Bright, SW cor. SE NW, Section 1-26-1w, Valley Center Pool, has been completed for 105 bbls. in chat 2,579-83 feet and 2,688-91 feet. Fisher & Lauck's No. 2 Trustee, SW cor. SE, Section 19-27-2, East Borough Pool, has been completed for 1,127 bbls. in chat 2,968-73 feet.

Sumner County

Lario and others' No. 13 Weinrich, CWL SE NW, Section 23-32-2, made 82 bbls. in sand 2,000-70 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 58)

Humble Oil & Refining Co.'s No. 3 Bowers, SW cor., Section 29, is drilling at 3,171 feet in anhydrite. It had gas at 3,143 feet and oil at 3,162-68 feet. Humble's No. 7 Bowers, SW cor. NW, Section 29-18-38, is shut down for orders at 2,750 feet. Continental Oil Co.'s No. 1-A State, SE NW SE, Section 29-18-38, is rigging up rotary.

Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30-18-38, is drilling at 4,000 feet. George F. Getty, Inc.'s No. 2 McKinley, SW SE NE, Section 30, cemented the 7-inch at 3,858 feet, and its No. 3 McKinley, SE cor. NE, Section 30, is shut down at 2,765 feet in anhydrite. The 9⅝-inch was cemented at 2,755 feet. Getty's No. 4 McKinley, NW cor. NE, Section 30, and No. 5 McKinley, NE cor., Section 30, are locations. Humble's No. 2-A Bowers, NW cor. SE, Section 30, is drilling at 3,435 feet in anhydrite. It had a show of gas at 3,274-84 feet. Humble's No. 4 Bowers, NE cor. SE, Section 30, is drilling at 2,875 feet in anhydrite. It had some gas at 2,785-88 feet and an increase at 2,842-49 feet. Humble's No. 5 Bowers, NW NE SE, Section 30, is shut down for orders at 2,750 feet, and its No. 6 Bowers, NE cor. SE, Section 30, is shut down for orders at 2,750 feet. Amerada Petroleum Corp.'s No. 3 McKinley, SW NW NW, Section 30, is a cellar.

Texas Production Co.'s No. 1-C State, NE cor., Section 25-18-37, an offset on the south of Texas Pacific's No. 1 State, is drilling at 3,835 feet in lime and had a show of gas at 3,626 feet.

Empire Gas & Fuel Co.'s No. 1 Fowler, NE cor., Section 31-18-38, is drilling out plug after cementing the 7-inch at 3,938 feet. Ohio Oil Co.'s No. 2 State-Northrup, C SE SE, Section 32-18-38, is drilling at 1,900 feet in salt and anhydrite. The top of the salt was at 1,603 feet. The same company's No. 3 State-Northrup, NE cor. SE, Section 32, spudded on June 25. Shell Petroleum Corp.'s No. 2 State, NW SW NE, Section 32, is drilling at 3,375 feet in anhydrite and lime; its No. 3-A State, SE cor. NE, Section 32, is drilling at 660 feet in red rock, and its No. 4 State, SW cor. NE, Section 32, is a location. Gypsy Oil Co.'s No. 2 Grimes, NE SE NW, Section 32, cemented the 15½-inch at 250 feet, and the Amerada Petroleum Corp.'s No. 1-A State, SW NW NE, Section 32, is drilling at 3,483 feet in anhydrite and lime.

Building Rigs

Continental Oil Co.'s No. 1-B State, C SW SW, Section 33-18-38, is building rig, and its No. 2-B State, NW cor. SW, Section 33, is digging cellar. Landreth Petroleum Co.'s No. 1-B State, SW cor. NW, Section 33, is drilling at 820 feet in sand.

Hobbs High, Inc.'s No. 1 Tatum, NW SW SW, Section 35-18-38, is drilling at 2,913 feet in anhydrite. The base of the salt was at 2,605 feet and the elevation is 3,609 feet.

Midwest Refining Co.'s No. 33 Byers, SE SW NE, Section 4-19-38, is drilling at 3,315 feet in anhydrite, and its No. 33 State, SE SW NW, Section 4, is rigging up rotary at 100 feet. Its No. 8 State, C NW NW, Section 4, is bottomed at 2,798 feet in lime and anhydrite and is killing gas. Midwest's No. 3 State, NW NE SW, Section 4, is rigging up rotary at 250 feet, and its No. 26 State, C SE SE, Section 4, is drilling at 1,655 feet in salt. The top of the salt was at 1,645 feet. Its No. 26 State, C SE NW, Section 4, is digging cellar. Texas Production Co.'s No. 1 McKinley, NE NW SW, Section 4-19-38, cemented the 8¼-inch on bottom at 2,750 feet. The base of the salt was at 2,630 feet.

Sun Oil Co.'s No. 1 McKinley, C NE NE, Section 5-19-38, is drilling at 3,440 feet and had an oil show at 3,170-82 feet.

Atlantic Oil Producing Co.'s No. 1 State, NE cor., Section 6-19-38, is drilling at 214 feet in the red beds, at which depth the 12½-inch was cemented.

Midwest Refining Co.'s No. 8 State, C NW NW, Section 10-19-38, cemented the 10¾-inch at 1,580 feet. The top of the anhydrite was at 1,540 feet.

Texas Production Co.'s No. 1 Selman, NW cor. SE, Section 15-19-38, is bottomed at 2,907 feet in anhydrite and rigging up cable tools.

Fisher & Lowrie's No. 1 State, NE cor. NW, Section 11-18-36, 9 miles west of the Hobbs Pool, is drilling at 5,467 feet in lime.

Eunice Area—Lea County

The Atlantic Oil Producing Co. has temporarily abandoned its No. 1 Coleman, SW NE NW, Section 17-21-36, upon which rigging had been completed. George F. Getty, Inc.'s No. 1 State, NE cor., Section 19-21-36, has rig on the ground. Continental Oil Co.'s No. 1 William Meyers, SW cor. NW, Section 28-22-36, is drilling by lower whipstock at a total depth of 3,750 feet. Tidal Oil Co.'s No. 1 Coleman, SW cor. NE, Section 17-21-36, is drilling at 2,936 feet in anhydrite. The base of the salt was at 2,800 feet and top of the brown lime at 2,880 feet. The elevation is 3,634 feet. Based on the lime, it is running about 100 feet higher than the Continental Oil Co.'s No. 1 Meyers, half a mile to the southwest, which was completed some time ago with an initial production of 1,300 bbls. a day. Ohio Oil Co.'s No. 1 State-McDonald, SW NW SW, Section 15-22-36, is drilling at 2,100 feet in salt and anhydrite. The top of the salt was at 1,590 feet.

Tatum Area—Lea County

A. D. Morton and others' No. 1 State, C NW, Section 32-11-38, is bottomed at 5,275 feet and shot the lost tools with 40 quarts to loosen.

Cooper Area—Lea County

Texas Pacific Coal & Oil Co.'s No. 5-A State, NE, Section 20-23-36, is drilling at 2,880 feet in anhydrite. The top of the salt was at 1,565 feet and the elevation is 3,414 feet.

Jal Area—Lea County

Midwest Refining Co.'s No. 34 Farnsworth, SE SE, Section 13-26-36, is drilling at 2,965 feet in lime, and its No. 19 Farnsworth, SW SW, Section 14-26-37, is drilling at 2,370 feet in anhydrite.

Maljamar Area—Lea County

Maljamar Oil & Gas Co.'s No. 3 Baish, NE NW, Section 21-17-32, had a show of oil at 4,085 and 4,137 feet and stopped for a test, making 177 bbls. natural the first day and 166 bbls. the second day. It is drilling deeper at 4,140 feet.

Eddy County

Lockhart & Co.'s No. 2-X Parke, NW NW, Section 23-17-30, Maljamar area, is drilling at 2,425 feet. Pueblo Oil Co.'s No. 5 Russell, SW cor. NW, Section 18-17-31, was completed at 3,547 feet and is averaging 50 bbls. a day on the pump. The pay was at 3,437-73 feet.

BeBaca County

Matador Oil Co.'s No. 1 Wood, SW SW, Section 6-4n-20, has contracted for the deepening of the test from 3,005 feet to 4,000 feet.

San Juan County

Dorothy Oil Co.'s No. 2 Goede, Blanco district, is drilling at 1,750 feet with the Picture Cliff as the objective. The Farmington sands had a little gas and a show of oil. The 5⅜-inch is at 1,425 feet. K. D. Stoddard, who has been engaged in straightening out the affairs of the Childers Drilling & Producing Co., says these are about in shape for the resumption of drilling on No. 2 Ute, NW NW, Section 24-31-16w, Westwater. It has been idle for the past year at 2,490 feet. The Continental Oil Co. is moving in material for a rotary test to the Pennsylvanian on the Rattlesnake Dome. Last year its No. 17, C NE, Section 2-29-19, was completed in the Pennsylvanian, 6,774 feet, and made 700 to 800 bbls. of oil per day in spite of inability to shut off water from an upper horizon. This was the discovery well in that formation. This structure is expected to furnish crude for the company's refinery now under construction at Denver.

McKinley County

Walker Dome Oil Co.'s No. 2, SE cor. NE, Section 14-15n-10w, Ambrosia Lake district, which had 350 feet of high gravity oil in a sand at 993 feet, drilled into a second sand at 1,012 feet. This well is about half a mile north of a test drilled in 1923 by the Midwest Refining Co. which was abandoned in the McElmo formation at 1,460 feet.

Luna County

The Angelus Oil & Mining Co.'s No. 3 State, NW SE, Section 20-21-10w, Deming district, is drilling at 5,200 feet after being idle for some time.

COLORADO

Jackson County

The Producers & Refiners Corp.'s No. 1 Hendershot, SE NE, Section 2-6n-81, on the Pole Mountain structure, which has been the subject of rumors for the past three weeks, is drilling at 4,040 feet in gray sand with 3,750 feet of water standing in the hole. The horizon is not identified, but probably is the Wall Creek sand of Wyoming in the Frontier formation. This wildcat was reported having colors in sandy shale at 3,926 feet and at 4,000 feet it was shut down and reports were circulated that the hole was showing some oil and gas. The core drill was run and at 4,008 feet it again shut down for orders. The 8¼-inch next was cemented at 4,006 feet and drilling resumed. If this formation is the Frontier, there is still 300 or 400 feet to go to reach the objective Dakota. A sand in the Dakota which outcrops to the west is 300 feet thick and shows saturation. The Frontier in Colorado has never yielded anything of importance and generally carries water or is dry and in most areas is not a very good reservoir for oil. The Midwest Refining Co.'s No. 21-X Rich, SW NW, Section 9-6n-80, Buffalo Creek, 3 miles to the southeast of the Producers & Refiners well, is bottomed at 3,900 feet in lime at which depth the 8⅝-inch was cemented.

LaPlata County

LaPlata County, in the southwestern part of the State, in which there was considerable drilling several years ago but which has been inactive recently, is to have another test. The Murchison Oil Co., which is controlled by the interests identified with the Southern Union Gas Co., is moving in for a test on the SW cor. NW, Section 29-33n-13w, on a nose of the Parker Dome known as Dry Mesa. The location is 6 miles north of the New Mexico boundary and 7 miles north of a gas well drilled several years ago by the Gypsy Oil Co. A little farther to the south on the Ute Dome are three gassers drilled by the Midwest Refining Co. and the Producers & Refiners Corp. The Murchison interests are building a 120-foot derrick for a rotary test, the intentions being to drill a deep test to the Pennsylvanian formation. The wells drilled in that area several years ago did not go below the Dakota series or the top of the red beds. The new operation will be known as No. 1 Thomas Doesher and is near a well started in 1928 by the Childers Drilling & Producing Co., but which stopped at 820 feet on account of financial difficulties. The McGarr Petroleum Corp.'s No. 1 SE NE, Section 27-33-12, Red Mesa, is reported shut down at 2,160 feet. The Detroit Oil Association's No. 1 Olbert, NW SW, Section 9-35-12, is bottomed at 2,623 feet in blue lime and is preparing to run casing. It is believed to be on top of the Sundance and is just through an 80-foot sand which was dry.

Archuleta County

The Standard Oil Co. of Colorado's No. 1 Fitzhugh, NW SE SW, Section 34-33n-1e, on the Chromo Dome, 22 miles southeast of Pagosa Springs, commenced spudding on July 6 and is bottomed at 60 feet. This formerly was carried as the Outwest Investment Co., but was taken over by the operating company. The surface is the Mancos shale and the test is to be carried through the Dakota series down to the Sundance and possibly the Pennsylvanian. The company and affiliated interests have 18,000 acres covering two domes and several spreads have been sold. H. L. Oliver worked out the geology and spotted the well.

Montrose County

The Uncompahgre Oil & Gas Co.'s No. 1 Colorado Title & Trust, SW NW, Section 27-50n-10, which has been idle at

2,031 feet for some time, may resume at an early date with the intentions of drilling to the Shinarump conglomerate.

Mesa County

The Argo Oil Co.'s No. 1 Hoel, NE cor., Section 23-8s-104, High Line, is still bottomed at 3,000 feet and sidetracking at 2,747 feet.

Huerfano County

The Midland Petroleum Co.'s No. 1 Campbell, NE SE, Section 4-29s-69, Oak View structure, has commenced spudding in a test to the Dakota and is drilling at 130 feet. It is near a well drilled several years ago by the Panuco Exploration Co. which had some gas at around 3,600 feet. The Ojo Exploration Co., a concern composed of Denver and Walsenburg business men engaged in exploring the area around the Ojo oil seep, is preparing to bail and test a show of oil and gas in its No. 1, Section 5-29s-69, at 151 feet. The seep has shown live green oil as far back as the history of the region goes. The area is considerably broken by faulting and the geologists are not agreed as to whether the oil is coming from the Pennsylvanian formation or the Pierre shale. The men behind the undertaking have all the desirable acreage under lease.

Park County

The South Park Oil & Gas Co.'s No. 1 Eshe, SE cor. NW, Section 5-9s-76, Muleshoe structure, is drilling at 60 feet with cable tools in an 18-inch hole with the intentions of going to 3,500 feet. The South Park Oil Co., another concern, is drilling below 600 feet and carrying the 12½-inch in its No. 1 Milligan, NE cor. SE, Section 13-8s-76, Jefferson structure. Both operations are in a large basin surrounded by granite mountains.

Las Animas County

The Trinidad Development Co.'s No. 1 Flonz, SW SE SW, Section 23-32-63, is bottomed at 2,700 feet with 2,100 feet of water in the hole and is preparing to abandon. The Dakotas were dry. It had a small show of gas at 2,640 feet and probably stopped in the Sundance.

Lincoln County

The Kelly Oil Co.'s No. 1 State, SE NW, Section 36-14s-57, is shut down at 3,350 feet.

Jefferson County

The Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, is bottomed at 3,568 feet and having some trouble landing the 6⅝-inch on account of cavy ground.

Douglas County

The Perry Park Oil Co.'s No. 1 Cannon, SE NW, Section 11-9s-68, is drilling below 600 feet in the Pierre shale.

Bent County

Continental Oil Co.'s No. 1 Pipe Springs, NE cor. SE, Section 27-27-49, has been dropped from the drilling reports. It has been tied up for some time at 6,075 feet with 2,500 feet of water in the hole and the tools at the bottom.

Morgan County

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan Dome, is drilling below 1,825 feet.

Weld County

The Platte Valley Petroleum Co.'s No. 1 Patterson, SW SW, Section 24-6n-61, Greasewood, is temporarily shut down at 6,297 feet with the 4½-inch 15 feet off bottom.

Larimer County

Donahoe & Babcock's No. 1 Maxwell, NE NE, Section 25-8n-70, Bellevue, is drilling below 110 feet and is through the boulders which caused considerable delay. Continental Oil Co.'s No. 3 Scott, SW SE, Section 6-9-68, Wellington Dome, a Dakota well being deepened to the Lakota, is drilling at 4,466 feet. The same company's No. 1 Hoffman, SW NE, Section 23-4n-70, Deininger Dome, is rigging up.

Routt County

Texas Production Co. is building derrick for its No. 4 Carstarphen, NE NW NW, Section 5-6n-86, Tow Creek, a little to the north and northwest of a group of three producers on the lease. The same company's No. 7 Quaintance-Hocking, NE SE, Section 18-6-86, is drilling at 1,760 feet. Both wells have the Mancos shale as the objective.

Garfield County

Fulton Petroleum Co.'s No. 1 Smith, NE NW, Section 8-8s-102, Garmesa Dome, is rigging up. This location is near a gas well drilled several years ago by the Sun Oil Co. and is being put down to open a supply of gas for Grand Junction and Fruita where the company has franchises.

Rio Blanco County

Magnolia Petroleum Co.'s No. 1-A Fordham, NW SW, Section 9-2s-96, Piceance Creek, is drilling at 4,880 feet in shale. It cut a sand at 4,820-40 feet that was dry except for a small show of gas. Texas Production Co.'s No. 1 Potter, NE SW, Section 30-2n-96, White River, joint with the Ohio Oil Co., is still being allowed to blow in the hope that it will clean itself. It is making considerable gas with mud and a little oil. It is probable the tools will be run to clean out. It is likely another test will be drilled at some future date.

Moffat County

The record being made by the Texas Production Co. in its No. 12 Knowlton, SW SE, Section 33-5n-91, Moffat Dome, is attracting considerable attention. It was only a few years ago that the rotary drill was considered impractical in the Rocky Mountain states and almost all drilling was done with cable tools. In the last few years the use of rotaries has shown some increase, but many of the operators have retained their former prejudices. The No. 12 Knowlton is being drilled with a rotary and driven with steam power. It commenced spudding on June 9 and on July 5, the twenty-seventh day, it had reached a depth of 3,847 feet. This is close to 150 feet a day and is expected to reach the objective Sundance sand in 40 to 45 days, barring accidents, while wells drilled with cable tools usually take four months. The hole is straight and in good condition and the company is believed to have established a record for the Rocky Mountain area. A. R. Wilson, general manager, expresses the opinion that the results to date show conclusively that the rotary can be successfully used in this territory.

Midwest Refining Co.'s No. 24 Hannewalt, NE SE SE, Section 4-6n-92, Bell Rock structure, which opened a new horizon in the Mesa Verde formation with a flow of 32,000,000 feet of gas a day at 2,867 feet, is bottomed at 2,908 feet and running the 8⅝-inch casing. At this depth it was making around 10,000,000 feet of gas at first reported to be coming from a deeper sand, but it was found that the gas had broken through from behind the 10¾-inch casing. The sand was 25 feet thick and at 2,861 feet there was a show of light green oil. The hole is to be continued on down to the objective Morapas sandstone. Little information is available concerning the Keoughan-Myers' No. 1 State, SW SW, Section 16-4n-101, Midland Ridge structure, as both operators are at the well which is some distance from the nearest point of communication. It is reported to be about half way down to the objective Madison lime at around 3,000 feet and that the formations which have been hard and slow drilling are beginning to soften up. The structure is eroded to the top of the Tensleep. Texas Production Co.'s No. 1 Berlin, SW NE, Section 19-12n-100, Bartram Dome, is bottomed at 2,654 feet and preparing to plug back to the gas sand at 2,200 feet to complete as a gas well.

WYOMING

Fremont County

A substantial showing of high grade green oil in the top of what is probably the Muddy formation at a little below 4,150 feet in the Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte Dome, in Fremont County, was one of the outstanding developments of the week in Wyoming. The well had barely scratched the formation when some oil made its appearance. A core was taken and the formation showed oil saturation and no water. The oil rose 60 feet in the hole within an hour after the core barrel was pulled and then drilling was resumed at 4,182 feet. The formation is believed to be the Muddy in the Upper Cretaceous, but is possibly the Dakota. If it is the latter, the Muddy has pinched out at this location, but should later developments confirm the identification as the Muddy, then it was found about 250 feet lower on the structure than in the discovery well, a mile to the south.

The Alkali Butte structure has been known for many years and was mentioned in reports of the early territorial geologists. Ten or 12 years ago tests were drilled by a subsidiary of the Continental Oil Co. and the Midwest Refining Co., but these did not reach the Dakota which at that time was not considered a promising oil horizon. The Continental well had some gas in the Frontier. In 1927, the Texas Production Co. acquired acreage on the structure and drilled a test near the old Continental well in the SE NW, Section 1-33-95. It encountered oil in the Muddy formation at 3,952-4,000 feet and flowed as high as 600 bbls. a day. Drilling continued and a flow of 3,000,000 feet of gas was found in the Cloverly or Dakota sand at 4,151-57 feet. A dry sand was cut at 4,203-40 feet in the Morrison. The hole was then plugged back to 4,175 feet and completed.

Last year the company started a second test in the well which is now showing oil, a little less than a mile to the northwest of the discovery. Drilling in the field is very difficult on account of the rapid dips of the formations and the rig was skidded twice in the present operation. A discovery in the drilling well will not only prove up a new light oil field for Wyoming, but will have an important bearing on the possibilities in the Dakota in the Muskrat, Pilot Butte, Sand Draw and other fields in that area which have large quantities of gas in the Frontier, but which have not been tested in the Dakota and underlying formations. The results in the No. 1 State will be awaited with considerable interest.

The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte, which killed a flow of 63,000,000 feet of gas per day in the Muddy to test the lower horizons, has succeeded in sidetracking rotary drill stem and is about ready to begin making new hole at 3,735 feet. The Lakota is the next objective. The Producers & Refiners' No. 10, Section 14-32-95, Sand Draw, the first well in that field to get through the big gas in the Frontier, is shut down at 3,080 feet for water. The same company's No. 2, SE NW, Section 33-34-92, Muskrat Dome, is drilling at 3,110 feet in dark shale.

Natrona County

The deep test being drilled on the Midway Dome north of Casper and south of the Salt Creek Field by the Midwest Refining Co. for the joint account of the Salt Creek Producers Association, the Mountain Producers Corp., H. Leslie Parker and others is reaching an interesting stage. This well, No. 11 Middy, C NE NE, Section 23-35n-79, is drilling at 4,771 feet and only 15 feet shallower than the total depth reached in a hole drilled on the same quarter in 1921 by the Midwest interests. After the next 15 feet of hole the drill will be working in virgin territory. The log shows it is running about 40 feet higher than the other test and, according to revised figures, the second Wall Creek, the first objective in which oil may be found, probably will be encountered at 5,100 feet. The rotary will be used to drill to the top of the second Wall Creek when a change-over to cable tools will be made. The plans are to continue drilling to the deeper horizons which are productive in Salt Creek regardless of what may be found in the first objective. Excellent time has been made in drilling this well. It spudded on May 5 and was drilled to 300 feet where the conductor pipe was set and on May 22 the hole was turned over to the contractors who began drilling with the rotary.

The Midwest's No. 29-DT, NW, Section 35-40-79, the test to the granite in Salt Creek, is drilling at 4,690 feet in white lime and sand. The large flow of water in the upper Madison has been shut off.

The Wyalta Oil Co.'s No. 5 Smith, Section 11-38-78, east of Teapot Dome, has been completed at a shallow depth and machine is being moved over to No. 4 to complete. After No. 4 is finished, the rig will be moved to the Spindletop Dome where the company will drill a series of wells. The Bessemer Oil Co.'s No. 6, NE, Section 18-33-83, Poison Spider, is drilling at 300 feet. This company has a 680-acre lease upon which are five producing wells.

Carbon County

The Midwest Refining Co.'s No. 31 Eades, SW SE, Section 1-18-78, Dutton Creek, is drilling at 4,745 feet in shaly lime and is getting close to the objective. The Producers & Refiners Corp.'s No. 8, NE NW, Section 7-26-89, Wertz Dome, is tearing down tools after cementing the 6⅝-inch casing at 4,100 feet and drilling out plug. Total depth is 4,150 feet. This well was completed last year as a big gasser in the Sundance and when a new rig was built a few weeks ago it was reported it was to be deepened to the Tensleep, but no new hole was made. Same company's No. 16, Section 25-26-87, Ferris Dome, has recovered 22 joints of liner. Total depth is 2,705 feet and the 8¼-inch is at 2,072 feet. The Producers & Refiners' No. 1, Section 11-24-88, O'Brien Springs, is being abandoned at a total depth of 1,880 feet, and its No. 3, SE NW, Section 2-19-88, Hatfield Dome, is bottomed at 4,055 feet and underreaming the 4¾-inch at 4,024 feet.

Weston County

The Osage Field in northeastern Wyoming, which has been attracting considerable attention the past few months since the bringing in of the Jones well in the NE SE, Section 14-46-64, which flowed 800 bbls. in 20 hours, had another good completion in the Lambie Oil Co.'s No. 1 Julius Bock, SE SW NE, Section 14-46-64. It had been flowing 200 bbls. a day from the top of the sand at 1,670 feet. It was deepened to 1,679 feet and put 160 bbls. into the tank in seven hours. It is about one-fourth of a mile northwest of the Jones well. This is the first well drilled by the company in Wyoming, newcomers in the State, though they are experienced operators in West Virginia. The Omaha Syndicate's No. 3, NE SW NW, Section 8-46-63, was completed in the shale as an 8-bbl. well. The Osage Trust Co.'s No. 5, NW cor., Section 13-46-64, found the sand dry at 1,490-1,560 feet. This location is a little more than half a mile to the north and a little east of the Jones well. Pipe line runs from the Osage Field in June amounted to 24,500 bbls. Curtis & Straitiff's No. 2 Updike, SE cor. NW, Section 14-46-64, a new operation, is drilling at 300 feet, and the Oregon-Wyoming Oil Co.'s No. 1, SE cor. NE, Section 25-46-64, is drilling at 400 feet. Tom Don's No. 4, NW SE, Section 20-46-63, is drilling at 950 feet, and Dornacher and others' No. 2, SE SE, Section 12-46-64, is rigging up larger machine at 520 feet. M. K. Mouser's No. 1 Bock, NW cor., Section 2-46-64, is drilling at 900 feet, and the Osage-Wyoming Oil Co.'s No. 1 Witzell, SE NE NW, Section 30-46-64, is drilling at 1,400 feet. The Wesco Oil Co.'s No. 6 Fee, NW NE SE, Section 13-36-64, is ready to spud.

Park County

Texas Production Co.'s No. 1 Freeman, C NW SE, Section 30-51-100, Oregon Basin, is drilling at 3,475 feet in the red beds. Oneida Oil Co.'s No. 1 Beck, SW cor., Section 28-52-100, an edge well which has been shut down since reaching the pay, was reported to have been opened this week for a few minutes and to have made a head at the rate of 40 bbls. an hour. However, this represented accumulated pressure and probably does not represent the capacity of the well on steady production. Lenco Petroleum Co.'s No. 2 Rousseau, NW SE NW, Section 33-51-100, is having trouble at 3,935 feet where the tools stuck. The hole is full of oil. Same company's No. 3 Rousseau, SW SE NW, Section 33, is drilling at 3,100 feet in the red beds. Wyoming-Western Oil Co.'s No. 3 Hough, SE cor., Section 18-51-100, is shut down at 4,828 feet. The Continental Oil Co.'s No. 26 Elk No. 2, SE NE, Section 24-58-100, Elk Basin, is drilling at 1,225 feet. Elk Basin Syndicate's No. 1 Johnson, NE SE, Section 6-57-99, in the south extension, is shut down for casing at 2,417 feet, and the Local Oil Co.'s No. 7 Tendolle, SW, Section 32-58-99, is drilling at 1,320 feet. Henderson Production Co.'s No. 6, SE, Section 31-58-99, is drilling at 515 feet. Cody Petroleum Co.'s No. 1 Danker, SW cor., Section 22-57-98, Big Polecat, is

still swedging the 10-inch casing which collapsed at 1,950 feet. Resolute Oil Co.'s No. 1, SW NE. Section 17-57-101, Badger Basin, is drilling at 5,800 feet. T. N. Clark and others' No. 2, SE SE, Section 11-49-102, Spring Creek, is drilling at 4,155 feet. California Exploration Co.'s No. 2, NW NE, Section 14-48-102, Pitchfork, is drilling at 3,450 feet. Midwest Refining Co.'s No. 31 Frannie Oil, SW NE, Section 25-58-98, Frannie Dome, is drilling at 2,455 feet in the red beds, and its No. 31 Rosenberg, SW SE, Section 24-58-98, is drilling at 1,940 feet in yellow clay.

Big Horn County

Ohio Oil Co.'s No. 1 Easton, SW NE, Section 33-56-97, Byron Dome, is drilling in lime at 3,887 feet. At 3,750 feet, in broken Madison lime, the hole was reported showing oil and gas and this was continuing at 3,770 feet.

Hot Springs County

Midwest Refining Co.'s No. 8 Weeks, NW SE, Section 6-44-98, Wagonhound, is drilling at 2,520 feet in yellow clay.

Niobrara County

Argo Oil Co.'s No. 7 Wehopeso, SW NW, Section 19-39-60, Mule Creek deep test, is bottomed at 2,778 feet in the Tensleep and straightening hole at 2,775 feet. Ohio Oil Co.'s No. 1 Converse Sheep, SW SE, Section 32-36-65, Lance Creek, a deep test to the Sundance, is abandoning hole at total depth of 3,122 feet and will skid rig.

Sublet County

Superior-Wyoming Oil Co.'s No. 8, Lot 3, Section 3-26-113, La Barge, is rigging up. Wolf Petroleum Co.'s No. 1 Lewis-Long, SW, Section 5-27-113, is resuming after being idle nearly a year. Fitzpatrick and others' No. 2 Elkhorn, NE, Section 17-27-113, formerly Circle Oil Co., is drilling at 450 feet in a 15-inch hole. Joseph Minton and others' No. 1, SE, Section 9-27-113, has set the 8¼-inch at 860 feet to shut off water. Ogden-La Barge Oil Co.'s No. 1, Lot 2, Section 18-27-113, is drilling at 5,700 feet.

Sweetwater County

Prairie Oil & Gas Co.'s No. 75-A, SW NW, Section 11-26-90, Little Lost Soldier, which recently was completed as the discovery well in the Tensleep, was cored 2 feet deeper to 3,962 feet to get a better sample for identification, and was given a test. It averaged 1,500 bbls. per day.

Lincoln County

Mountain Oil Corp.'s No. 1 State, NE cor., Section 36-25½-115, Wyoming structure, is fishing for tools at 815 feet in the Woodside formation. Midwest Refining Co.'s No. 1 Larcher, SE, Section 25-37-117, Little Grays River, is trying to get circulation at 2,027 feet.

MONTANA

In the Border Field, 10 producers are making oil at this time, one well is drilling into the pay and seven wells are drilling. The Southern Alberta Exploration Co.'s No. 1 is holding up at about 100 bbls. daily. This is the latest completion. The Capitol, Celtic and Dixie wells on the Canadian side are drilling and the Kotops is shut down. The Dalco Oil Co.'s No. 2 is ready to spud in.

On the Montana side, the Monalta No. 2 is on top of the pay and will be a completion next week. Three other wells are drilling on the Montana side and this side of the line has 6 of the 10 producing wells. The way the wells are showing it seems that Montana will have the bulk of the Border Field on its territory.

ROCKY MOUNTAIN PRODUCTION

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending July 12:

WYOMING

Salt Creek	23,770
Frannie	150
Big Muddy	2,050
Oregon Basin	2,830
Dutton	50
Elk Basin	680
Byron	10
Warm Springs	150
Lovell	20
Ferris	60
Grass Creek	1,920
Hamilton	920
LaBarge	1,440
Lance Creek	150
Lost Soldier	940
Osage	1,500
Poison Spider	160
Rock River	2,180
Simpson Ridge	70
Teapot Dome	30
Dallas-Derby	260
Hudson	250
South Casper Creek	980
Total	40,570

MONTANA

Cat Creek	1,110
Kevin-Sunburst	5,930
Pondera	2,300
Lake Basin	50
Border	400
Total	9,790

COLORADO

Moffat	979
Fort Collins	1,238
Florence	531
Iles	1,143
Tow Creek	399
Boulder	25
Rangley	50
Total	4,365

NEW MEXICO

Hogback	490
Rattlesnake	1,310
Table Mesa	100
Artesia	700
Cap Rock (Maljamar)	994
Jal	1,309
Hobbs High	22,766
Lea City	5,697
Miscellaneous (Lea County)	370
Total	33,736
Grand total	88,461
Week ending July 5	102,032
Difference	13,571

CANADIAN FIELDS

(Continued from Page 58)

berta Pacific Consolidated of its acreage in Alberta on a 50-50 basis.

Red Coulee Field

In the international Red Coulee Field, Southern Alberta Exploration Co.'s No. 1, LSD 8, Section 3-1-16w4, is reported to have flowed 80 to 100 bbls. a day after swabbing, and is being put on the pump for a 30-day test. Pumping production of around 160 bbls. is looked for. Southern Alberta's No. 2 has cellar dug on the next location to the east. Capitol Oil & Gas Co.'s No. 1, LSD 3, Section 21-1-16w4, got a small show in the Sunburst sand at 2,498 feet and is deepening at 2,692 feet close to the Ellis. Vanalta Oils' No. 2, LSD 3, Section 4-1-16w4, has been drilled deeper into the sand, getting somewhat increased production.

Devonshire Oils' No. 1, LSD 3-4, Section 10-1-16w4, which has been standing at 1,400 feet, will be completed. Officers were elected as follows: President, H. G. H. Glass; vice president, William Buxton; secretary-treasurer, S. R. Vallance; managing director, F. W. Hope; directors, F. A. Dowler, F. H. Mensinger, J. M. Hangen and W. Quigley.

On the Montana side, Alberta Pacific Consolidated Oils' No. 2 is rigging up for a test on the Singleton ranch, NW, Section 12-37-4w, a half mile south of Hannah Porter Oil Co.'s No. 1 producer. Monalta Oil Co.'s No. 2 Buckley, Section 1-37-4w, is reported drilling into the producing sand with cable tools.

Fault in Waite Valley

On the Waite Valley structure, Richfield Petroleum's No. 1, LSD 4, Section 25-20-4w5, the deepest test on the structure, encountered a fault in the Kootenay formation at 4,765 feet and is shut down. Small oil and gas shows were met in the upper horizons. The test may be carried deeper, or a second well may be drilled on another portion of the company's acreage.

Border Fields

In the Skiff Field, southern Alberta, Devenish Petroleums' No. 4, LSD 13, Section 29-5-14w4, is drilling around 2,000 feet, after encountering a fair gas show close to 1,900 feet. Crude production is looked for in the Ellis around 3,000 feet. Gas at the 1,900-foot horizon was not encountered in any of the four previous tests drilled in the Skiff Field.

In the Keho Lake district, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, is drilling at 410 feet. In the Lomond district, Hudson's Bay's No. 1, LSD 1, Section 27-16-18w4, is drilling at 3,502 feet.

On the Montana side, Sunburst-Rio Grande-McLaren's No. 1 on the Pinhorn structure in the Sweetgrass Hills is reaming to set pipe at 1,600 feet. A gas show was met in one of the upper sands of the Colorado, but commercial production is looked for around 3,300 feet. Two new companies to operate in Toole County have been organized by Canadian interests, both with offices at Shelby. B. & H. Oil Co., capitalized at $250,000, has as directors R. H. Breckon and C. L. Hatch of Shelby and R. E. Breckon of Calgary. The O. I. C. Oil Co., capitalized at $100,000, has been incorporated by Ed Kasten, Coleman Swenson and W. E. Drought.

Suffield Prospect

In the Suffield district, southern Alberta, Ontario-Alberta Oil Co.'s No. 1, LSD 11, Section 4-17-8w4, is pulling 4½-inch casing to repair and shut off water from a horizon at 3,230 feet. The test is down 3,540 feet after encountering a small show of heavy crude at 3,245 feet. At the present depth the well is thought close to a heavy gas horizon.

In the Milk River area, Capitol Oil & Gas Co.'s No. 1-A, LSD 16, Section 32-1-12w4, is at 3,425 feet with small oil and gas showings continuing.

Wainwright Field

In the Wainwright Field, east central Alberta, Fabyan Petroleums' No. 1, LSD 8, Section 24-45-8w4, is apparently a fair producer of heavy crude, with some gas, at 2,045 feet. It is probable Fabyan's No. 4 will be started close to No. 1 and the rig skidded; No. 4 will start with a large-sized hole for a deep test, large enough to carry a 10-inch hole through the present producing horizon. Senator Oil & Gas Development Co.'s No. 1, Section 23-44-6w4, is reported practically rigged up ready to spud in. W. W. Booth is field manager and E. L. Sherwood head driller. Lloyd's Petroleum's No. 1, LSD 12, Section 6-45-6w4, has spudded in with drilling operations in charge of N. W. Harvey.

Operations Near Castor

Important new wildcat operations are in prospect for the Castor area. On Paint Earth Creek, Hudson's Bay Oil & Gas Co.'s No. 1, LSD 5, Section 27-39-15w4, has steel derrick up and drilling contract let to spud in about July 15. Gasoline engines will be used for drilling. In the Sullivan Lake district south of Castor, Alberta Pacific Consolidated Oils, Ltd., and associate interests have filed on 40,000 acres, and Frontier Development Co., a subsidiary of the Canadian Exploration Co., has filed on 50,000 acres. Alberta Pacific and Frontier companies will start a joint core drilling campaign with some 50 structure tests to be drilled. It is possible the first commercial test by the Alberta Pacific interests will not be started till 1931. It is claimed the structure is a northerly continuation of the Sweetgrass arch, so far as geological reconnaissance has been able to define it. It is estimated the limestone will be reached around 3,500 feet.

Gas Field at Carbon

A shallow gas area of some importance is being tested near Carbon, Alberta, by the Carbon Exploration Co. Carbon Exploration's No. 1 has encountered gas at several levels. Drilling was continuing at 655 feet, with 700 feet as the objective.

Carbon's No. 1 is on the old Senator Pope ranch, 4 miles east of Carbon. Officers of the company are: President, J. A. McDonald; vice president, W. M. Keys; secretary-treasurer, S. F. Torrence; directors, D. E. McCannel, F. Reeve, Calgary; S. N. Wright, W. G. Shell, W. A. Braisher, Carbon.

Regal Oil Deliveries

Deliveries to the Regal refinery in June aggregated 14,477 bbls. compared with 11,266 bbls. the previous month. The increase is chiefly due to larger production from Okalta's No. 1, which went up from 2,758 to 4,020 bbls. and Wellington's No. 1, increased from 2,603 to 4,742 bbls. New producers listed were Alberta Federated Oils' No. 1 (formerly Freeman-Lundy) with 871 bbls. and Homestead's No. 1, with 628 bbls.

Saskatchewan

In southeastern Saskatchewan, Simpson Oil Co.'s No. 1, Section 9-29-25w2, is down about 2,250 feet and waiting for casing.

Ontario Drilling

In Ontario, Union Natural Gas Co.'s No. 11 in the D'Clute Field, Raleigh Township, Kent County, finished at 1,755 feet with a hole full of salt water. Location was on the Ronson farm, Lot 14, Concession 15. Union Natural Gas Co.'s No. 13, John Dawson farm, Lot 147, North Talbot Road, Raleigh, is drilling around 1,000 feet. Union's No. 12 has been located on the Sykes farm, Lot 15, Concession 15, Raleigh, about 2,000 feet east of No. 11 and equipment is being moved in. Southern Ontario Gas Co. has started a wildcat on the Linley farm, Lot 131, about 2,000 feet north of No. 3 Highway and close to the west line of the lot, and is drilling close to 600 feet. The location is about a half mile west of Cedar Springs and a considerable distance east of other producers in the D'Clute Field.

In Dawn Township, Lambton County, Union Natural Gas Co.'s No. 47, Lot 19, Concession 1, has a fishing job at 1,705 feet. The test has some gas at this depth.

In Mosa Township, Middlesex County, Southern Ontario Gas Co.'s No. 3 is drilling close to the potential gas sand.

British Columbia

In southeastern British Columbia, Akamina Valley Oil Co.'s No. 1, in the Akamina Valley, has derrick up and is expected to spud in this month.

OKLAHOMA FIELDS

(Continued from Page 44)

In the south extension to the Oklahoma City Pool in Cleveland County, the Prairie Oil & Gas Co. and others' No. 1 Reynolds, NE cor. SE NW, Section 6-10-2w, was shut down at 5,560 feet and may be abandoned. Other tests in that district that are also shut down are Continental Oil Co.'s No. 5 V. Sudik, NW cor. SW NE, Section 6-10-2w, Indian Territory Illuminating Oil Co.'s No. 3 M. Reynolds, NW cor. NE NW, Section 6-10-2w, both being rigs.

Sinclair Oil & Gas Co.'s No. 8 School Land 54, NW cor. NE, Section 36-11-3w, was opened during the week for its regular producing period, and started cutting the connections below the derrick floor. For a while many believed it would go wild, but later in the day the cutting halted and the well was shut in without doing any damage.

Hall & Briscoe and others' No. 2 Lindsey, SE cor. NE NE, Section 15-11-3w, the first well completed in that section, and extended production to the northwest, was rigging up tools to drill deeper. It made 78 bbls. the first hour and 944 bbls. in 11 hours and 10 minutes. The total depth was 6,476 feet.

Sunray Will Drill Deeper

The Sunray Oil Corp. has completed a deal to drill No. 1 Higbee, SW cor. NE, Section 20-6-1, Cleveland County, to the Wilcox sand. It is a wildcat test and has been shut down for some time, at a total depth of 6,515 feet. The original contract depth was 6,500 feet, where the hole was measured and the dry hole contributions were paid. At its present depth it is believed to be in the Simpson series. A string of 6-inch casing will be landed at 6,350 feet. If the test is dry in the deeper formations it will be plugged back to the shallower horizons for a production test. A showing of oil was found at 5,746-64 feet.

In Payne County

The Gardner Petroleum Co. and others' No. 1 Edwards, SE cor. NE, Section 13-19-1w, Payne County, is believed to be west of the fault line and better production is expected to be found south and west of the well, in the opinion of some of the geologists after checking the area. The Misener sand was found at 4,834 feet, where oil rose 1,500 feet in the hole in a few hours, with a small amount of water. It is a community test being drilled by Gardner Petroleum Co., Prairie Oil & Gas Co., Deep Rock Oil & Refining Co., Tidal Oil Co., Sunray Oil Corp., Sinclair Oil & Gas Co. and Reiter-Foster Oil Corp.

Reiter-Foster Oil Corp. and others' No. 1 Rule, C NW NE, Section 8-19-1w, in western Payne County, was drilling in what may be the Bartlesville sand at 4,700 feet, with nothing showing.

Minnehoma Oil Co.'s No. 1 Shadel, in Section 7-19-1w, has cemented casing near the top of the Misener sand at 4,820 feet. Several tests drilling in the

vicinity are expected to be completed in a week or two.

Southern Activities

Interest in southern Oklahoma is in the Cement Pool in Caddo County, in the southeastern part of the county. Mid-Kansas Oil & Gas Co. and Ramsey Petroleum Co.'s No. 9 Wade, SW cor. SE SW Section 2-5-9w, swabbed 277 bbls. in 12 hours on a recent gauge from a new lower sand horizon, making the third producing formation for the field. The shallower wells in the pool have been producing for 12 years. The No. 9 Wade was being drilled deeper at total depth of 4,140 feet. The oil sand was found at 4,067-78 feet. A number of new locations have been staked around the new well.

Production in the Tatum Field in Carter County was extended during the week by the completion of the largest well ever found in that area. The production was extended quarter of mile east by the Trevelyn Oil Co.'s No. 1 Mitchell, SW cor. NW SE Section 24-1s-3w, which flowed 1,489 bbls. in 12 hours. The sand was found at 2,287-2,451 feet, and the total depth of well is 2,458 feet.

Greater Seminole Region

The West Asher-Wanette extension well was showing water and other areas in the Greater Seminole group were quiet. Prospects were not any too bright for an extension of production in the Wanette Pool in southern Pottawatomie County. Westheimer & Neustadt's No. 1 Johnston, NE cor. SE SW Section 27-6-3, 1 mile south of production, had 700 feet of oil in the hole and a showing of water from a total depth of 3,658 feet. Standard tools were being rigged up and the test may be drilled deeper. No new wells were completed in the pool the latter part of the week. Twin State Oil Co.'s No. 3 Neal, NW cor. NE SE Section 22-6-3, may be the next well completed. It was drilling at 3,400 feet. The Nos. 1 and 2 Neal were completed and prorated.

Pure Oil Co.'s No. 1 Ashby, SE cor. NE Section 22-7-5, Seminole County, a wildcat, about 2 miles east of the St. Louis Pool, was fishing for tools in the Sylvan shale at 4,030 feet. The test has had several showings of oil and gas in the shallower sands and should the Wilcox sand fail to produce the test will be plugged back and a production test made.

Deepest Test Dry

Sinclair Oil & Gas Co. has abandoned the deepest drilling test in the State as a dry hole. It has been drilling for more than a year and is being abandoned at 8,583 feet. It was No. 1 Howell, C SW SW Section 14-26-24w, Harper County, in the northwestern part of the State. The tools were stuck in the bottom of the hole and a fishing job resulted. The test was still in the Mississippi lime and had been drilling in that formation for the last 1,700 feet.

Greater Seminole Production

A decline of about 2,500 bbls. a day is noted in the production from the Greater Seminole area for the week ending July 7. Since the announcement of the pipe line companies reducing the shipments in all the flush areas in the State a further reduction can be expected. The Seminole Field averaged 201,460 bbls. from 1,883 wells. The daily average gauges from the different pools in the Greater Seminole area were as follows:

Pool—	Wells	Bbls.
Little River	372	33,785
East Little River	82	15,751
Carr City	57	4,961
Maud	138	4,425
Mission	104	9,591
Bowlegs	280	21,411
Earlsboro	290	29,158
South Earlsboro	23	17,751
East Earlsboro	154	27,411
Seminole	266	23,485
East Seminole	33	3,107
Searight	84	10,624
Allen	267	19,785
Asher	26	1,690
Konawa	85	22,927
St. Louis	487	30,017
Sasakwa	53	8,498
Total	2,811	289,432

Greater Seminole Oil Shipments

A decline of more than 3,000 bbls. a day is noted in the total pipe line and tank car shipments from the Greater Seminole area for the week ending July 9. The total shipments were 265,005 bbls. and the daily average shipments were as follows:

Company—	Seminole (bbls.)	Asher, Pearson, St. Louis (bbls.)	Konawa (bbls.)
Barnsdall	2,707	....	....
Continental	8,691	....	537
Consolidated	404	1,027	....
Cosden	13,068	....	5,753
Deep Rock	4,310	721	....
Empire	5,722	....	....
Gulf	28,396	2,995	689
Independent	....	1,872	....
Magnolia	9,829	6,753	....
Oklahoma	26,280	....	506
Prairie	17,582	7,223	7,795
Prod. & Ref.	1,454	....	....
Pure	4,100	....	....
Shell	9,019	679	3,494
Sinclair	37,121	8,444	1,143
Texas	14,886	1,178	4,568
Tidal	12,690	5,390	....
White Oak	1,347	....	....
Total	197,495	36,282	24,485
Tank cars	6,843		
Grand total	204,338		

Actual Production

The daily gauges from the Oklahoma City Pool for the last seven days ending July 14, showing the date, number of barrels produced each day, number of wells on production, and the total number of wells completed each day, were as follows:

Date—	Bbls.	Wells Prod.	Total Comp.
July 8	79,521	40	337
July 9	91,477	44	340
July 10	128,435	52	343
July 11	51,171	45	343
July 12	87,578	47	343
July 13	58,058	44	346
July 14	79,694	45	348

Oklahoma City's Shut-In Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce for 24 hours or less as of July 12, and are now shut in for the proration period, was 595,205 bbls. The initial production and the approximate dates each well will be opened for its regular producing period follows:

I. T. I. O.:			
Sudik	*1	[1]30,000	.....
N. Emerson	*10	[2]855	7-15-30
C. E. Trosper	*1	20,016	7-16-30
Trosper Hughes	*1	[3]3,000	8- 7-30
Jones Community	*2	17,164	8- 5-30
A. Brokaw	4	[4]32	8- 6-30
N. Emerson	*7	1,687	8- 5-30
C. Brokaw	3	11,303	8- 4-30
Theimer	*3	[5]10,540	8- 7-30
Precure	*1	[6]385	8- 7-30
Trosper	*11	4,285	8- 3-30
N. Emerson	*9	3,274	8- 7-30
L. Jones	*7	2,463	8- 7-30
M. Uncil	*2	2,050	8- 4-30
Salsman	*4	[7]225	8-14-30
M. Fuzzell	3	6,301	8-21-30
G. Button	5	[8]9,000	8-21-30
Trosper Park	*6	[9]5,000	8-21-30
E. Trosper	*1	[10]6,271	8-20-30
Jones	*10	[11]2,604	8-19-30
L. Farley	4	7,395	8-18-30
Mary Sudik	*4	[12]513	8-27-30
Canfield Button	3	[13]6,494	8-28-30
School Land	*2	[14]4,482	8-27-30
School Land	*1	[15]4,734	8-27-30
School Land	*3	[16]7,734	9- 2-30
S. Peterson	*2	[17]6,327	9- 2-30
A. Brokaw	*3	2,855	9- 1-30
C. Trosper	*2	[18]2,385	9- 1-30
Johnson	*5	2,406	8-31-30
Farley	*1	6,408	8-30-30
Mary Sudik	*7	[19]5,169	9- 3-30
Rensimer	*1	[20]1,930	9-14-30
M. Sudik	*8	[21]8,916	9-14-30
H. G. Trosper	*1	[22]7,595	9-14-30
S. Peterson	*2	[23]7,591	9-12-30
E. Trosper	*2	[24]185	9-12-30
Theimer	*5	[25]562	9-12-30
W. Franklin:			
Theimer	*3	16,690	8- 7-30
Lowery	*8	[26]10,000	8-20-30
Wright	*1	5,805	8-27-30
Cromwell:			
Trosper Park	*17	17,953	8- 7-30
Trosper Park	*15	5,240	8-13-30
School Land 54	12	[27]12,000	8- 8-30
School Land 54	8	[28]10,000	8- 8-30
School Land 54	*3	4,420	8-13-30
School Land 54	*4	[29]9,050	8-14-30
Trosper Park	*6	11,921	8-30-30
Sinclair:			
Kinter	10	115	8- 4-30
Vincl	*5	[30]5,730	8-14-30
Vincl	*8	[31]3,720	8-14-30
School Land 67	*2	6,770	8-14-30
School Land 54	7	[32]8,000	8-30-30
Vincl	*11	31,290	8-30-30
School Land 54	*13	7,150	8-20-30
School Land 54	*10	17,220	8-30-30
School Land 67	*3	[33]5,940	8-29-30
School Land 54	*16	[34]8,145	9- 1-30
Vincl	*9	[35]7,075	9- 2-30
School Land 54	*6	[36]12,000	9-14-30
Vincl	*14	[37]2,225	9-13-30
Vincl	*16	[38]3,545	9-13-30
Donnell	*1	[39]1,958	9-13-30
Coline:			
Warren	9	5,544	8- 8-30
Clauer	1	[40]1,203	8- 1-30
Warren	8	9,298	8- 4-30
Olds	*10	[41]2,119	8- 2-30
Olds	*11	[42]1,284	8-15-30
Clauer	6	5,596	8-28-30
Olds	*7	[43]1,763	8-28-30
Clauer	*10	4,446	9- 1-30
Slick:			
Hoopes	*7	3,995	8- 1-30
Dunivan	*1	[44]13,482	8-15-30
Hoopes	*8	798	8-14-30
Carter	*1	[45]9,891	8-16-30
Townsend	*1	[46]4,798	8-16-30
Classen	*1	[47]1,711	8-29-30
Foote	*1	[48]10,000	8-27-30
G. Milner	*1	[49]9,924	9-14-30
Keenan & Co.:			
Cunningham	*2	[50]12,000	8-11-30
Skelly:			
Hoopes	8	12,339	7-10-30
Mid-Texas:			
Community	*1	[51]13,000	8- 6-30
Tom Slick Oil Co.:			
Hoopes	*2	[52]572	8- 5-30
Hall & Briscoe:			
Holmes	*1	[53]9,743	7-31-30
Prairie:			
Hiddleston	9	[54]4,310	8-20-30
Jack Shaffer et al:			
Jones Community	1	2,345	8-21-30
Hall & Briscoe:			
Lindsay	2	[55]944	9- 1-30
Total	87	595,205	

*Wells producing from the Simpson sand. All others are producing from the Arbuckle lime.

[1]Estimated. [2]Thirteen hours. [3]Fifteen minutes. [4]Twelve hours. [5]Five hours. [6]Eighteen hours. [7]Sixteen and one-half hours. [8]Seventeen hours. [9]Nineteen hours and 45 minutes. [10]Sixteen hours. [11]One hour and 15 minutes. [12]Thirteen hours and 55 minutes. [13]Thirty minutes. [14]Eleven and one-half hours. [15]Fifteen hours. [16]Three hours. [17]Nineteen hours. [18]Fifteen and three-quarter hours. [19]Eighteen and one-half hours. [20]Six hours. [21]Fifteen hours and 40 minutes. [22]Fifteen and one-half hours. [23]Four hours. [24]Three hours. [25]Eleven hours and 10 minutes. [26]Seventeen hours and 30 minutes.

These notations indicate the number of hours the wells produced on their initial production test.

Caddo County

Magnolia Petroleum Co. is erecting the rig for No. 5 B. Hedlund, NW cor. NE, Section 11-5-9w. The rig is being built for No. 6 Bert Lacky, NE cor. NW NW, Section 11-5-9w.

Coal County

Blackwell Oil & Gas Co.'s No. 1-A Gumm Brothers, SW cor. NE NW, Section 26-3-9, is drilling at 1,790 feet.

Cotton County

Harris & McNeal's No. 6 Chambers, SE cor. NE NW SW, Section 1-2s-10w, has been abandoned at 2,180 feet. Silurian Oil Co. and Perkins & Cullum's No. 5 Chambers, CNL NE NW, Section 2-2s-10w, has been abandoned at 2,154 feet. Shasta Oil Co.'s No. 8 Burneaugh, CNL NE SE, Section 2-2s-10w, has been completed for 125 bbls. in sand 2,177-2,201 feet.

Carter County

J. H. Hudson has the rig material on the ground for No. 1 Brooks, SW cor. SE SE, Section, 13-1s-3w. Magnolia Petroleum Co. made location for No. 2 E. W. Spigner, SE cor. NE NW, Section 24-1s-3w. Rig material is on the location for No. 3 E. R. Spigner, NE cor. NW, Section 24-1s-3w. The Texas Company made location for No. 3 Evans, NE cor. SE SW, Section 24-1s-3w. Wirt Franklin Petroleum Corp. staked location for No. 1 W. Mitchell, NW cor. SE. Section 24-1s-3w. Clark & Cowden and Ven Mex Oil Co.'s No. 1 Miller, SW cor., Section 29-1s-3w, is a rig on the ground.

L. J. Woodruff's No. 1 Watkins, NE cor., Section 22-1s-3w, has been abandoned at 520 feet.

Grady County

Meridian Gas Co.'s No. 1 Haynes, CSL SW SW, Section 30-4-7w, has been completed for 29,000,000 feet of gas in sands 2,020-28 feet.

Cleveland County

The Prairie Oil & Gas Co. made location for No. 2 Vincent Sudik, NE cor. NW NW, Section 5-10-2w, Oklahoma City Field.

Hughes County

Iglehart and others' rig is up for No. 1 Williams, C SE SW, Section 28-9-10. C. B. Bunte and others moved the rig in for No. 1 Westmoreland, C NE SW, Section 11-7-8.

Jefferson County

Kiel & Wylie's No. 1 O. W. Seay, SW cor. NW SW NW, Section 35-6s-5w, has been abandoned at 1,818 feet. Sutherland Oil Co.'s No. 2 Riverbed, CSL SW SW, Section 10-7s-5w, made 50 bbls. in sands 1,243-63 feet.

Marshall County

Bilbo Oil Corp. has a machine on the location for No. 14 Taliferro, NE cor. NW SE SE. Section 14-5s-5, Madill Pool. Otto Reynolds' No. 1 Iliff, NW cor. SE, Section 26-5s-5, is drilling at 150 feet. Bilbo Oil Corp.'s No. 5 Davis-Sullivan, NE cor. SW NW, Section 30-5s-6, is drilling at 450 feet. Otto Reynolds' No. 3 Davis-Sullivan, SW cor. NW SE NW, Section 30-5s-6, is a machine. J. C. Walker and others' No. 1 Parks, NW cor. NE NW, Section 5-5s-5, is a dry hole at 675 feet. Bilbo Oil Corp.'s No. 13 Taliferro, NW cor. NE SE SE, Section 14-5s-5, is dry and abandoned at 616 feet. J. D. Loofburrow's No. 1 J. Kraeer, NW cor. SW, Section 25-5s-5, is a dry hole at 912 feet. Bilbo Oil Corp.'s No. 4 Davis-Sullivan, SE cor. NE SW NW, Section 30-5s-6, has been completed for 75 bbls. in sands 534-664 feet. Magnolia Petroleum Co.'s No. 2 West Rutland, SW cor. SE SE NW, Section 30-5s-6, made a 75-bbl. well in sand 603-56 feet. Otto Reynolds' No. 2 Davis-Sullivan, SW cor. NW SE NW, Section 30-5s-6, has been completed in sand 538-658 feet for 80 bbls. on the pump.

Oklahoma County

Wirt Franklin Petroleum Corp. made location for No. 1 Page-Tucker, SW cor. SE, Section 35-12-3w, Oklahoma City Field. Cunard Oil Co. made location for No. 1 Armourdale, Block 2, Lot 6, SW cor. NW NW, Section 2-11-3w. Anderson & Pritchard's No. 4 Gibbons, NE cor. SE SE NE, Section 2-11-3w, is a rig under construction. The rig is being built also for No. 5 Gibbons, NE cor. SW NE, Section 2-11-3w. Phillips Petroleum Co. is erecting the rig for No. 1 Unruh, SE cor. NW SW NW, Section 2-11-3w. No. 1 Bay, SE cor. SW NW NW, Section 2-11-3w, is a rig going up. Location has been made for No. 1 Penn, NW cor. SW NW NW, Section 2-11-3w. No. 1 Ciger, SW cor. SE SW NW, Section 2-11-3w, is also a location. Tom Slick Oil Co. made location for No. 4 Classen, SE cor. NW NW, Section 2-11-3w. Tom Slick Oil Co. and Atkinson staked location for No. 2 Key, NW cor. SE SW, Section 2-11-3w. Location has been made for No. 2 Clegg, NE cor. NW SW, Section 2-11-3w. No. 1 Rodman, SW cor. NW SW, Section 2-11-3w, is a location. Tom Slick Oil Co. has dug the cellar for No. 2 Campbell, NE cor. SE NE, Section 3-11-3w. No. 3 Campbell, SE cor. NE NE, Section 3-11-3w, is also a cellar. Cromwell-Franklin Oil Co. made location for No. 35 Trosper Park, SE cor. NE SW, Section 12-11-3w. Location has also been made for No. 36 Trosper Park, SW cor. NW SE, Section 12-11-3w. No. 37 Trosper Park, NE cor. NW SE, Section 12-11-3w, is a location. Julian Oil Royalty Co. is building the rig for No. 1 Unknown, NE cor. NW, Section 14-11-3w. Indian Territory Illuminating Oil Co. has the rig up for No. 1 Ivanhoe Addition, Block 1, Lot 38, NW cor. NE NE, Section 15-11-3w. J. E. Mabee and others' No. 1 Schilling, Block 11, Lot 29, Schilling Addition, SE cor. NE SW, Section 10-11-3w, is rigging up. Mid-Texas Oil Co.'s No. 1 Community, NE cor. SE NE SW, Section 1-11-3w, made 19,300 bbls. from sand 6,315-6,400 feet. Indian Territory Illuminating Oil Co.'s No. 2 L. Trosper, SW cor. NW, Section 12-11-3w, has been completed for 601 bbls. in sand 6,375-6,475 feet. No. 3 A. Brokaw, SW cor. NE NE, Section 13-11-3w, made 2,855 bbls. in Arbuckle lime 6,085-6,360 feet. Coline Oil Co.'s No. 10 Clauer, NW cor. SW SE, Section 25-11-3w, has been completed for 4,546 bbls. in sand 6,525-6,684 feet. Indian Territory Illuminating Oil Co.'s No. 2 Emmerson-Joyce, NW cor. NE NE, Section 25-11-3w, made 10,000,000 feet of gas at 6,941 feet after plugging back from 7,134 feet. Sinclair Oil & Gas Co.'s No. 14 School Land No. 54, SW cor. NE, Section 36-11-3w, has been completed for 18,825 bbls. in sand 6,535-6,626 feet. No. 11 Vencl, SW cor. SE, Section 31-11-2w, made 25,885 bbls. in Wilcox sand 6,543-6,649 feet. The Prairie Oil & Gas Co. and T. B. Slick and Phillips Petroleum Co. made location for No. 8 Sigmon, SE cor. SW SW, Section 32-11-2w.

Osage County

Winona Oil Co. has a machine on the location for No. 16, CEL NE, Section 20-29-9. Empire Oil & Refining Co.'s No. 3, NW cor. SW SW, Section 23-27-11, is a machine. Link Oil Co.'s No. 7, NE

cor. SW SW, Section 34-25-9, is an old well drilling deeper at 1,620 feet. Galt Brown's No. 3, SW cor. NE NE, Section 15-24-8, is drilling deeper at 2,665 feet. Devonian Oil Co. moved a machine in for No. 1, NE cor. NW NE, Section 33-22-11. Winona Oil Co.'s No. 15, NE cor. NW NE, Section 20-29-9, has been completed for 25 bbls. in Peru sand 1,552-76 feet. Indian Territory Illuminating Oil Co.'s No. 434, SW cor., Section 22-27-11, made 1,250,000 feet of gas in lime 1,851-67 feet. Carter Oil Co.'s No. 3, NE cor. SE NE, Section 32-25-9, is dry and abandoned at 2,429 feet. Galt Brown's No. 7, CEL NW, Section 7-24-8, is dry and abandoned at 2,592 feet. Indian Territory Illuminating Oil Co.'s No. 431, NW cor. SE SE SW, Section 3-23-8, has been completed for 1,750,000 feet of gas in Layton sand 1,080-1,101 feet. Oklahoma Natural Gas Corp.'s No. 1,793, SE cor. NW NW SE, Section 30-21-10, has been completed for 500,000 feet of gas in sands 1,530-38 feet and 1,629-38 feet.

Pawnee County

Pawnee Oil & Producing Co.'s No. 1-A Fee, SE cor. SW SE, Section 23-20-7, is rigging up. Wasson and others' rig is up for No. 1-A Wrightsman, NE cor., Section 8-20-8. Mooney and others' No. 1 Tillock, SE cor. SW NE, Section 20-20-10, is dry and abandoned at 1,956 feet.

Pontotoc County

Dixie Oil Co.'s No. 1 Allen, NW cor. SE NE, Section 32-5-5, Bebee Pool, is drilling at 50 feet. Benedum-Trees Oil Co.'s No. 1 Stannitt, SW cor. SE SW, Section 28-5-5, has been completed for 90 bbls. in Hunton lime 2,195-2,404 feet. Dixie Oil Co.'s No. 2 Roper, SW cor. SE NW, Section 32-5-5, has been completed for 120 bbls. in Viola lime 2,364-2,507 feet.

Pottawatomie County

Atlantic Oil Producing Co. made location for No. 1 Thomas, NE cor. NW, Section 9-7-4. Gypsy Oil Co. made location for No. 2 Archer, NE cor. SW SW, Section 23-6-3, West Asher Pool. Wilcox Oil & Gas Co. staked location for No. 4 Warren, SE cor. NW SW, Section 23-6-3. Indian Territory Illuminating Oil Co. made location for No. 1 Gregg, NW cor. SE SW, Section 23-6-3. Deep Rock Oil Corp. has the rig on the ground for No. 1 Marshall, SW cor., Section 30-6-4. Superior Oil Corp. and others' No. 1 Alford, NE cor. SE NE, Section 7-9-5, Earlsboro Pool, made 550 bbls. in Wilcox sand 4,300-15 feet. J. A. Hulls' No. 1 Townsend, NE cor. SE SE, Section 22-6-3, West Asher Pool, has been completed for 886 bbls. in sand 3,484-3,504 feet. Twin State Oil Co.'s No. 2 Archer, SE cor. NE SE, Section 22-6-3, has been completed for 1,080 bbls. in sand 3,490-3,517 feet. Wilcox Oil & Gas Co.'s No. 2 Warren, SW cor. NW SW, Section 23-6-3, flowed 841 bbls. from sand 3,486-3,513 feet.

Seminole County

Carter Oil Co. and others made location for No. 2 Community-Amerada, SW cor. SE, Section 11-9-6. Hilton Phillips and others staked location for No. 4 Burgess, SW cor. NW NE, Section 29-6-6, Konawa Pool. Sinclair Oil & Gas Co. has the rig up for No. 3 Cully "A," SE cor. NW NW, Section 13-5-7, West Allen Pool. The Prairie Oil & Gas Co. is building the rig for No. 1 Hassman, SE cor. NE, Section 3-8-5, Carr City Pool. Carter Oil Co. and Denver Producing & Refining Co.'s No. 1 Cheparney, SE cor., Section 30-10-6, is dry and abandoned at 4,231 feet. Gypsy Oil Co.'s No. 1 N. Miller, NE cor. SW SE, Section 24-9-5, Earlsboro Pool, has been completed for 400 bbls. in Wilcox sand 4,-206-30 feet. Carter Oil Co.'s No. 4 Campbell, NE cor. NW SW, Section 20-9-6, flowed 270 bbls. at 4,258 feet after plugging back from 4,284 feet in Wilcox sand topped at 4,240 feet. Barnsdall Oil Co.'s No. 2 S. Factor, NE cor. NW SE, Section 13-7-6, Little River Pool, has been completed for 535 bbls. in Woodford shale 3,920-72 feet. Mid-Continent Petroleum Corp.'s No. 4 Aleck, SW cor. NE SE, Section 23-7-6, had sand 3,170-82 feet and pumped 30 bbls. Continental Oil Co.'s No. 9 Harris, NW cor. SW, Section 4-7-7, East Little River Pool, has been completed for 1,037 bbls. in sand 3,180-3,203 feet. Mid-Continent Petroleum Corp.'s No. 19 Smith, NE cor. SW NE, Section 5-7-7, topped the Cromwell sand at 3,245 feet drilled in to 3,346 feet and flowed 635 bbls. Empire Oil & Refining Co.'s No. 2 R. Fish, SE cor. SW NE, Section 19-7-8, has been shut in for 22,000,000 feet of gas in Gilcrease sand 2,890-2,907 feet. Gypsy Oil Co.'s No. 1 Louisiana, NW cor. SW SE, Section 16-6-6, Konawa Pool, is dry and abandoned at 3,787 feet. Hilton Phillips and others' No. 2 Chupco, SW cor. NW SE, Section 20-6-6, flowed 1,902 bbls. from sand 2,841-78 feet and 2,910-48 feet. Magnolia Petroleum Co.'s No. 1 Deavers, NE cor. NW SW, Section 29-6-6, is dry and abandoned at 4,215 feet in Wilcox sand topped at 4,212 feet. Hilton Phillips and others' No. 3 Burgess, NE cor. NW NE, Section 29-6-6, was completed for 3,535 bbls. in sand 2,910-79 feet.

Stephens County

Pandem Oil Co.'s No. 1 Burkleo, NW cor. SW NW NW, Section 4-2s-8w, is drilling at 50 feet. Sykes and others' No. 1 Wade, SE cor., Section 8-1s-8w, has been abandoned at 3,224 feet. John Fossett's No. 4 Adams, NE cor. NW SW, Section 19-1s-8w, has been completed for 900,000 feet of gas in sand 1,168-72 feet. George Pace and others' No. 2 Wilson, NE cor. SW NW NE, Section 20-2s-7w, has been abandoned at 1,400 feet. No. 3 Wilson, SW cor. NW NW, Section 20-2s-7w, is a dry hole at 1,868 feet. Simms Petroleum Co.'s No. 1 Duncan, CNL NE NE, Section 28-2s-7w, has been abandoned at 1,735 feet.

Creek County

Roach, Bishop and McMurty's No. 1 Willoughby, SE cor. NW SW, Section 26-18-9, is a rig. Tim Cushing and others' rig is up for No. 1 P. Self, NW cor. SE NW, Section 12-17-8. Elinor Oil & Gas Co.'s No. 1 Proctor, SW cor., Section 2-17-9, is spudding. Shell Petroleum Corp. moved the rig in for No. 8 Bruce, SE cor. SW NE, Section 10-17-9. Gilcrease Oil Co.'s No. 1 Bright, SE cor., Section 26-17-9, is drilling at 400 feet. Bryan Petroleum Co.'s No. 1 Williams, SW cor. NW SW, Section 3-17-10. Hensley and others' No. 1-A Sneed, SW cor. SE NW, Section 26-15-12, is drilling at 1,820 feet. C. G. Tibbens Oil & Gas Co.'s No. 3 Baker, SE cor. NW NW, Section 18-14-9, is showing for 20 bbls. in sand 2,288-2,322 feet. No. 2 Bartlett, NE cor. SW NW, Section 18-14-9, is estimated making 25 bbls. from sand 2,-316-56 feet. No. 3 Sneed, SW cor. NE NW, Section 18-14-9, is drilling at 1,625 feet. J. H. Markham, Jr.'s No. 2 P. Johnson, CNL NE NW, Section 2-19-7, has been abandoned at 3,008 feet. Irelan and Dean's No. 2 Bible, CEL NE SW, Section 20-19-9, has been completed for 160 bbls. in sand 2,193-2,240 feet. Phillips Petroleum Co. and Gled Oil Co.'s No. 2 Carter, NW cor. NE SE, Section 20-19-9, has been completed for 125 bbls. in sand 2,192-2,235 feet. E. L. Robinson and others' No. 1 Davis, SW cor. NW, Section 21-19-9, made 100 bbls. in sand 2,151-2,207 feet. Cooney, Henry and others' No. 1 Grayson, NW cor. SW SE, Section 10-17-9, is a dry hole at 2,065 feet.

Grant County

Bu-Vi-Bar Petroleum Co. and Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Hurst, C SW, Section 25-26-5w, is a rig under construction.

Garfield County

Champlin Oil & Refining Co. made location for No. 1-A Kindt, NW cor. NE NE, Section 36-23-4w.

Kay County

McFarland and others made location for No. 8 Simonds, C S half NW, Section 11-27-3.

Lincoln County

Magnolia Petroleum Co.'s No. 1 Benedict, SE cor. NW, Section 7-14-4, has been completed for 5,348 bbls. in sand 5,027-39 feet.

Muskogee County

P. Boyle and others' No. 1-A G. Howard, SE cor. NW SE, Section 19-15-16, is spudding. H. L. Jolly moved a machine in for No. 1-A G. Howard, NE cor. SW SE, Section 19-15-16. Barnes and others' No. 1 P. McIntosh, SW cor., Section 3-15-18, is rigging up. D. L. T. Co. and others' No. 5 L. Mackey, SE cor. SW NE SW, Section 9-15-18, is drilling at 400 feet. Western Development & Electric Co.'s No. 1 L. Ingram, NW cor NE SE, Section 9-15-18, is a machine. No. 2 E. Spaulding, SE cor. SW NW NE, Section 9-15-18, is a machine. Beland Oil Co.'s No. 9 H. James, CSL NE SE, Section 18-14-17, is rigging. John Aggas' No. 4 M. Hawkins, SW cor. SE SE, Section 28-16-15, is spudding. Mack Drilling Co.'s No. 4 D. Richards, NE cor. SW NW NE, Section 33-16-15, has been completed for 5 bbls. in sand 1,401-12 feet. P. Boyle and others' No. 1 E. Ware, C S half NE, Section 14-15-15, has been completed for 1,247,400 feet of gas in sand 1,420-31 feet. H. L. Jolly's No. 7 T. Carlina, SW cor. NW NW SW, Section 9-15-18, made 165 bbls. in sand 907-17 feet. C. D. Bradley's No. 1 Anderson, NW cor. SW, Section 26-15-19, is dry and abandoned at 1,250 feet after being deepened. W. E. Lightner and others' No. 4 G. Beams, CNL SW SW, Section 19-14-16, is a 20-bbl. well in sand 1,545-70 feet. L. F. Crow's No. 1 Schoonover, SW cor. NW NE SE, Section 10-13-18, has been abandoned at 1,737 feet.

Okfuskee County

T. P. McAdams moved a machine in for No. 5 Pincham, C SE NW, Section 1-10-11. Champlin Oil & Refining Co.'s No. 9 Washington, NE cor. NW SE, Section 15-11-11, has been completed for 120 bbls. in Wilcox sand 3,495-3,523 feet. McAdams' No. 4 Pincham, CEL SE NW, Section 1-10-11, is dry and abandoned at 2,000 feet.

Okmulgee County

W. B. Pine has the rig on the ground for No. 1 Bradford, CNL SE NE, Section 1-12-13. Rossiter Oil Co.'s No. 4 A. Burgess, CWL NE NW, Section 20-12-13, is drilling at 100 feet. Simms Petroleum Co. and others' No. 3 M. Smith, CEL NE SE, Section 21-12-14, is rigging up. J. E. Wallace's No. 3 B. Colbert, C NW NW, Section 14-14-14, has been completed for 25 bbls. in sand 1,-757-94 feet.

Payne County

Deep Rock Oil Corp. made location for No. 1 Harris, SE cor. SW NW, Section 9-18-5.

Pittsburg County

Midwestern Oil & Gas Co. moved a machine in for No. 1 Dyer, CSL SE SW, Section 4-7-18. Choctaw Gas Co.'s No. 1 School Land, SE cor., Section 9-7-18, is spudding.

Wagoner County

Price and others' No. 1-A M. Vernor, NE cor., Section 16-17-16, is drilling at 400 feet. Bryan Petroleum Co.'s No. 2 L. Jackson, NW cor. SW, Section 34-17-16, is spudding. Peterson & Young's No. 1 K. Holden, NW cor. SE SW, Section 13-16-15, is spudding. J. E. Martin's No. 1 A. Drew, NW cor. SW SE, Section 26-18-15, is a dry hole at 1,034 feet. Bryan Petroleum Co.'s No. 1 L. Jackson, SE cor. NE, Section 33-17-16, has been completed for 7,000,000 feet of gas in sand 871-76 feet.

PANHANDLE FIELDS

(Continued from Page 62)

1,351 feet, initial production 60 bbls., total depth 1,357 feet. Burns & Long's No. 4 Symank, top of pay 1,416 feet, initial production 10 bbls., total depth 1,427 feet. H. C. Donokoo's No. 1 Ward Brothers, top of pay 935 feet, initial production 20 bbls., total depth 941 feet. Fresno & Gafford's No. 1 Prideaux, dry and abandoned, total depth 650 ft. Golding & Cochran's No. 7 Brown, top of pay 1,163 feet, initial production 25 bbls., total depth 1,179 feet. Golding & Cochran-Dixie Oil Co.'s No. 2 Lanster, dry and abandoned, total depth 1,350 feet. Hunter and others' No. 1 Lowe, dry and abandoned, total depth 1,373 feet. A. P. Nicholson's No. 1 Stinnett, top of pay 709 feet, initial production 20 bbls., total depth 718 feet. Parker and others' No. 1 Dupriest, top of pay 1,433 feet, initial production 24 bbls., total depth 1,448 feet. Perkins & Cullum's No. 1 Hansen, top of pay 1,121 feet, initial production 60 bbls., total depth 1,136 feet. Perkins & Cullum's No. 1 Tipkin, top of pay 1,112 feet, initial production 55 bbls., total depth 1,134 feet. Wilson & Russell's No. 14 Prideaux, top pay 658 feet, initial production 13 bbls., total depth 681 feet.

Cooke County

Russell & Lloyd Oil Corp.'s No. 1 Jacob, oil sand 1,561 and 1,576 feet; initial production 16 bbls.; total depth 1,629 feet. Danciger Oil & Refining Co.'s No. 2 Truebenback, oil sand 952 feet; initial production 62 bbls.; total depth 960 feet.

Montague County

Barnsdall Oil Co.'s No. 6 Cunningham and others, oil sand 868-72 feet and 886-90 feet; initial production 50 bbls.; total depth 901 feet. Bridwell Oil Co.'s No. 10 Solman, oil sand 1,704 feet; initial production 10 bbls.; total depth 1,728 feet.

Wichita County

F. Ard and others' No. 1 Logan and others, dry and abandoned, total depth 1,830 feet. Arkansas Fuel Oil Co.'s No. 4 Kemp & Kempner, top of pay 1,758 feet, initial production 51 bbls., total depth 1,770 feet. Same company's No. 44 Kemp & Kempner, top of pay 1,656 feet, initial production 11 bbls., total depth 1,672 feet. Bridwell Oil Co.'s No. 2 Sparks, dry and abandoned, total depth 1,700 feet. George J. Proctor's No. 1 Honaker, top of pay 841 feet, initial production 120 bbls., total depth 845 feet. Furman Oil Co.'s No. 19 Waggoner, top of pay 1,499 feet, initial production 60 bbls., total depth 1,507 feet. United Producer Co.'s No. 16 Hodges, top of pay 1,751 feet, initial production 110 bbls., total depth 1,773 feet. Same company's No. 4 Hodges, top of pay 1,755 feet, initial production 45 bbls., total depth 1,773 feet.

Young County

Shaw & Knox's No. 4 Jarnigan, top of pay 2,482 feet; initial production 300 bbls.; total depth 2,502 feet. Shaw & Lynch's No. 1 Kisinger, dry and abandoned; total depth 3,100 feet. Bonner Oil Co.'s No. 9 Davis, top of pay 876 feet; initial production 9 bbls.; total depth 896 feet. Bonner Oil Co.'s No. 1 Weichman, dry and abandoned; total depth 1,217 feet. W. D. Gillett's No. 1 Belknap Coal Co., dry and abandoned; total depth 751 feet. Goldsmith & Hamilton's No. 1 Smith, dry and abandoned; total depth 1,243 feet. R. H. Helm's No. 1 Drum, dry and abandoned; total depth 802 feet. Independent Oil & Gas Co.'s No. 10 Larimore, top of pay (97 feet; initial production 340 bbls.; total depth 716 feet. King Royalty Co. and Bullington's No. 2 Graham, dry and abandoned; total depth 734 feet. Marr and others' No. 1 Bunger & Lisle, dry and abandoned; total depth 668 feet. Meeks and others' No. 1 Hansley, dry and abandoned; total depth 1,230 feet. Panhandle Refining Co.'s No. 4 Larimore and others, dry and abandoned; total depth 785 feet. Rathke Oil Co.'s No. 1 Barnhart, dry and abandoned; total depth 1,086 feet. Rathke Oil Co.'s No. 1 Hunt, dry and abandoned; total depth 1,102 feet. E. R. Riggs' No. 11 Larimore and others, oil sand 692 feet; initial production 300 bbls.; total depth 708 feet. Western Production Co.'s No. 2 Hamilton, dry and abandoned; total depth 1,000 feet. Westheimer & Daube's No. 7 Larimore and others, oil sand 690 feet; initial production 450 bbls.; total depth 703 feet. Westheimer & Daube's No. 8 Larimore, dry and abandoned; total depth 735 feet. Willis & Terrell's No. 2 Barrett and others, dry and abandoned; total depth 710 feet. Wooten-Reed and others' No. 1 Vick, dry and abandoned; total depth 665 feet. Young Brothers & Alexander's No. 2 Larimore, dry and abandoned; total depth 735 feet.

SECURES CONTRACT

CHICAGO, July 12.—The Deep Rock Oil Corp., has been awarded the contract to supply the Government with 1,350,000 gallons of Deep Rock Aviation Gasoline with Ethyl. The contract became operative July 1 and lasts through the remainder of the year. The gasoline is being distributed to various flying fields of the Middle West for the mail service.

HOOKUP FOR ROTARY WITH LOW STEAM CONSUMPTION

(Continued from Page 34)

oped, we take steam consumed, the relative importance of the pump is even greater. Considering the engine first, there is not a great amount of published data on steam consumption under field conditions. The writer once ran some tests on a rotary rig. No steam meters were available, so the exhausts of the pump and engine were connected to separate tanks of cold water, and the steam consumption estimated from the slopes of the temperature-time curves of the tanks; the combined figure being checked against the feed water measured to the boilers. The engine was connected to a direct current dynamo, instead of the drawworks, so that its output could be more accurately measured, and the pump horsepower was calculated from the amount and pressure of the liquid circulating. A figure of 70 pounds per horsepower hour was found for the consumption of the engine and 220 pounds per hydraulic horsepower hour for that of the pump. This was six or seven years ago, the engine was a 12″x12″ single, the pump a 10″x 5″x10″, and the steam pressure at the rig 100 pounds gauge. Modern equipment is probably more efficient, but not to a very great extent. The higher pressures permit the performance of a given quantity of work, on a smaller weight of steam, but as cut-offs have not been altered, the difference in favor of the modern plant will not be great. We will probably not be far wrong if we take 60 pounds dry steam per brake horsepower hour for the consumption of the engine, and 180 pounds per hydraulic horsepower hour for that of the pump. The consumption of the rig will then be something like the following:

Steam Consumption of Rotary per 24 Hours	Steam lbs.
Pump 3,800 h.p. hrs. at 180 lb/h.p. hr.=	684,000
Engine 1,240 h.p. hrs. at 60 lb/h.p. hr.=	74,400
Total	758,400

According to the above figures, 90 per cent of the steam consumed at the rig is consumed by the pump. This is because in the first place the pump is required to put out more power than the engine, while at the same time its thermal efficiency is much lower.

Pump Efficiency

The following are the chief reasons:

1. The steam is used nonexpansively, and the work that could be obtained from it by cutting off and expanding to a lower pressure is wasted in the exhaust. Large clearances accentuate this loss.

2. Low speed. This allows wasteful heat exchange between the steam and cylinder walls. On the exhaust stroke the metal is cooled by the exhaust steam and by re-evaporation of moisture, while on the power stroke the live steam loses heat to the piston and cylinder, and if saturated at admission is partly condensed and wasted. It is probable that if the speed of the pump could by some means be raised to 150 cycles per minute its steam consumption per horsepower hour would be about halved.

If it is true, as contended above, that about 90 per cent of the steam used on a deep Mid-Continent well is used by the pump, it follows that any success in reducing the consumption of the pump will have a correspondingly large effect on the total steam requirements of the rig.

With saturated steam at 250 pounds gauge, high speed noncondensing steam engines and turbines can, in the 200 to 300 horsepower sizes, be built to have a consumption of under 30 pounds per horsepower hour. In place of the direct acting steam pump, a power type piston pump, driven by a turbine or a high-speed 90 degree twin steam engine, might be used. Allowing for gear losses, etc., it should be possible to build a steam driven pump on these lines that would have a steam consumption of under 40 pounds per hydraulic horsepower hour. With such a pump the over-all consumption of a rig should be as follows:

	Lbs. steam 24 hrs.
Engine 1,240 H.P. hrs. @ 60 lb/H.P. hr.=	74,400
Pump 3,800 H.P. hrs. @ 40 lb/H.P. hr.=	152,000
Total	226,400

This is no more than one-third of the consumption calculated for the rig with the conventional steam pump.

Boiler Equipment

High-speed steam engines and turbines are compact, have a low weight to power ratio, and need not be expensive. Capital saved in boiler equipment would offset to a large extent the higher cost of the pumps, while the reduction in fuel, water and boiler maintenance might amount to anything up to $10,000, depending upon the depth of the well and fuel and water costs. Two boilers of 100 horsepower each should be sufficient for ordinary drilling conditions.

Some time ago, the argument and figures outlined above were submitted to a well-known pump manufacturer, who has since worked out an ingenious combination of turbine and piston type pump, which, it is believed, is shortly to be put upon the market.

There would appear to be only one other arrangement of prime movers for driving a rig that would combine the recognized advantages of steam for the drawworks with a fuel and water consumption much lower than that of the regular steam driven rig. It would be the combination of a steam driven drawworks with a power type pump driven by an internal combustion engine.

The writer regrets the amount of guesswork that has had to be used in compiling this article, but he has been unable to obtain much concrete data regarding the separate consumptions of steam drilling engines and slush pumps under actual operating conditions such as those obtaining in the Oklahoma City Field. Such measurements are shortly to be made by at least one of the larger operators and will probably be available before the end of the year. Working results from a rig equipped with a turbine driven slush pump may also be available by that time and allow a real comparison to be made.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 60)

COKE COUNTY

Arkansas Fuel Oil Co.'s No. 1 Stepp, 1,020 ft. NE, 2,340 ft. W of SE cor., Sec. 35, Blk. 1-A, H.&T.C. Sur. — Drlg. 3,440 ft.
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft. — Show live oil 3,275-78 ft.; drlg. 3,485 ft.

CONCHO COUNTY

Beesley et al's No. 1 S. Waring Est., 1,320 ft. from S and E of A. T. Robinson Sur., Abst. 2,120 — Machine.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock — Shut down 735 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land — Show oil 2,995 ft.; shut down 3,993 ft.; rig burned.
C. C. Duffey's No. 1-C Cowden Bros. & Co., 2,640 ft. from S and 3,960 ft. from W of Juan Cordona Sur. — Location.
Sun Oil Co.'s No. 1 First National Bank, C Sec. 6, J. H. Gibson Sur. — Total depth 1,070 ft.; running 8¼-in. casing.

CROCKETT COUNTY

Dixie Oil Co. and Amerada's No. 2 Powell, 258 ft. N and 2,349 ft. W of NE cor. of Sec. 42, T.C. Ry., but located in Sec. 52, Blk. BB — Location.
Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, L.&G.N. Sur. — Spudded and shut down.
Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, Blk. 1, G.C.&S.F.R.R. Sur. — Shut down 5,150 ft.
Magnolia Pet. Co.'s No. 2 Hoover, 2,310 ft. from S and 335 ft. from E of Sec. 2, Blk. FF, B.&B. Sur. — Location.
G. Schaul's No. 1 Bouscour Est., 330 ft. N and 2,310 ft. from W of Sec. 27, Blk. HH, G.C.&S.F. Sur. — Rig up and shut down.

CULBERSON COUNTY

Grisham & Hunter Corp.'s No. 1 Garren, 2,310 ft. from S and 330 ft. from E of Sec. 18, Blk. 89, P.S.L. Sur. — Shut down 2,514 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land — Drlg. 840 ft.

ECTOR COUNTY

C. P. Davis et al's No. 1 Hendricks, C SW, Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. — Shut down 4,012 ft.
Humble Oil & Ref. Co.'s No. 1 Jones, 330 ft. from S and 423 ft. from W of Sec. 6, Blk. 44, T.&P. Sur. — Location.
Independent Oil & Gas Co.'s No. 1 Elkson, 1,250 ft. S and 2,144 ft. E of NW cor., Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. — Shut down 3,800 ft.; 1,100 ft. oil in hole.
H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M.M.Br.&A. Sur. — Top salt 865 ft.; drlg. 2,225 ft.
T. P. Coal & Oil Co.'s No. 1 McKenzie, 1,650 ft. from S and 330 ft. from E of Sec. 282, Blk. 45, Twp. 2s, T.&P. Sur. — Shut down 3,870 ft.; swabbing dry.
R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor., Sec. 27, Blk. 44, T.&P.R.R. Sur. — Drlg. 3,110 ft.
Simms Oil Co.'s No. 3 University, 2,310 ft. from N and 330 ft. from W of Sec. 1, Blk. 35 — Running 8¼-in. casing; total depth 2,243 ft.
Skelly Oil Co. and Republic Prod. Co.'s No. 1 McKenzie, 990 ft. from S line and 330 ft. from E line of Sec. 28, Blk. 45, Twp. 2s, T.&P. Sur. — Top pay 3,665 ft.; increase 3,685 ft.; shut down 3,750 ft.; averaging 24 bbls. per day flowing twice each week.
Skelly Oil Co. et al's No. 1-C University, 2,310 ft. from N and W of Sec. 2, Blk. 35 — Building rig.
Sunray Oil Co. et al's No. 1 Jones, 2,330 ft. from N and 440 ft. from E of Sec. 6, Blk. 44, Twp. 3s, T.&P. Sur. — Top pay 3,750 ft.; made one 45-bbl. flow; drilled into water at 3,821-23 ft.; plugged back to 3,752 ft.
The Texas Co. et al's No. 8 Connell, 330 ft. from S and 440 ft. from E of Sec. 2, Blk. B-16 — Top salt 934 ft.; drlg. 2,135 ft.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. — Shut down 3,089 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 2 Barrett, 330 ft. from N and W of NE, Sec. 198, B.B.B.&C. Sur. — Drlg. 1,925 ft.
Cranfill & Reynolds' No. 1 Cooper et al, 330 ft. from S and 990 ft. from W of Sec. 198, B.B.B.&C. Sur. — Shut down 300 ft.
Cranfill & Reynolds' No. 2 Flannigan, 330 ft. from S and E of W half of Sec. 200, B.B.B.&C.R.R. Sur. — Drlg. 1,310 ft.
Mid-West's No. 1 Decker, 330 ft. from S and W of W 80 ac. of N 160, Sec. 8, Richardson Sur. — Drlg. 2,660 ft.
Roeser & Pendleton's No. 1 Steele, 660 ft. from N and 440 ft. from W of N half of SW, Sec. 210, B.B.B.&C. Sur. — Show gas 1,845-65 ft.; drlg. 2,635 ft.
The Texas Company's No. 1-A Teagarden, 150 ft. from S and 420 ft. from E of Sec. 8, Richardson Sur. — Drlg. 2,630 ft.

GAINES COUNTY

Humble Oil & Ref. Co.'s No. 1 Carswell, 660 ft. S and E of NW cor. of Sec. 23, Blk. A-27, Public School Land — Drlg. 3,705 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&G.N. Sur. — Spudded and shut down.
Richard's No. 1 Stoker, 330 ft. from N and W, Sec. 2, Blk. 2, G.H.&H. Sur. — Top lime 2,366 ft.; drlg. 3,010 ft.

GLASSCOCK COUNTY

Associated Oil Co.'s No. 1 Coffee, 2,310 ft. E and 330 ft. from S of Sec. 27, Blk. 33, Twp. 2s, T.&P. Sur. — Fishing 2,340 ft.
California Co.'s No. 2 Baker, 2,970 ft. S and 1,650 ft. E, parallel to section lines of NW cor., Sec. 23, Blk. 32, Twp. 2s, T.&P. Sur. — Coring 2,315 ft.; show oil 2,227-30 ft.
Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.P. Sur. — Total depth 2,956 ft.; fishing casing.
World Oil Co.'s No. 3-C McDowell, 2,310 ft. from S and W of NE cor., Sec. 21, Blk. 34, Twp. 2s, T.&P. Sur. — Shut down 560 ft.
World Oil Co.'s No. 1 Edwards, 330 ft. from S line and 2,310 ft. from W line of Sec. 13, Blk. 34, Twp. 2s, T.&P. Sur. — Top salt 1,490 ft.; drlg. 2,450 ft.

HOWARD COUNTY

Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. — Sulphur water 1,433-46 ft.; shut down 1,456 ft.
McGinley-Sigler's No. 1 Eyman-C, 330 ft. N and 990 ft. W SE cor., Sec. 93, Blk. 29, W.&N.W.R.R. Sur. — Location.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 — Drlg. 2,765 ft.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 — Shut down 261 ft.

HUDSPETH COUNTY

Rio Bravo Oil Co.'s No. 1 Southern Pacific right of way, 1,800 ft. N and 1,000 ft. E of Sec. 16, Blk. 72, Twp. 7, T.&P. Sur. — Fishing for tools 1,400 ft.
California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E — Drlg. 4,757 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 — Fishing 3,155 ft.

IRION COUNTY

Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 — Shut down 1,105 ft.
Cromwell et al's No. 1 Tankersley, 150 ft. from N and 210 ft. from W of E half of Sec. 1,230, G.C.&S.F. Sur. — Drlg. 850 ft.
Cromwell et al's No. 2 Tankersley, 200 ft. from N and 150 ft. from W of Sec. 1,219, T.C.R.R. Sur. — Drlg. 1,100 ft.
Cromwell et al's No. 3 Nutt, 904 ft. from N and 116 ft. from W of Blk. 6, Gonzales Co. School Land — Total depth 1,456 ft.; testing oil sand from 1,444-56 ft.; swabbed 55 bbls. in 9 hrs.
Straughn & Texannati Oil Co.'s No. 3 Nutt, 804 ft. from N and 150 ft. from W of NE cor. of NW, Blk. 6, Gonzales Co. School Land — Machine.
P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County — Show oil 7,931 ft.; shut down at 890 ft.; may drill deeper.
Webb et al's No. 1 Nutt, 150 ft. from S and 116 ft. from W of Blk. 5, Gonzales Co. School Land — Machine.

JONES COUNTY

Gibson & Johnson's No. 1 Hudspeth, 1,125 ft. from N and 483 ft. from E of Sec. 22, Edward Miles Sur. — Drlg. 2,515 ft.
Shabeen et al's No. 1 King, 6,750 ft. from N and 150 ft. from E of M. Bueno Sur. No. 197. — Drlg. 1,524 ft.

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. Sur. — Shut down 273 ft.

LAMB COUNTY

Graham Oil & Gas Co.'s No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Shut down 4,428 ft.

LOVING COUNTY

Dixie and Phillips Pet.'s No. 1 Johnson, 1,320 ft. from N and E of Sec. 38, Blk. 54, Twp. 2s, T.&P. Sur. .... Drlg. 3,420 ft.

Eppenauer et al's No. 1 Allen, 2,310 ft. from NE and NW lines Sec. 90, Blk. 1, W.&N.W. Sur. ..... Building rig.

Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Shut down 3,383 ft.

Hadlock et al's No. 2 Russell, 1,650 ft. SW of NE line, 2,310 ft. NW of SE line, Sec. 80, Blk. 1, W.&N.W. R.R. Sur. ..... Drlg. 3,408 ft.

Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.

Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur.. Rigged up.

Lockhart's No. 2 Wheat & Ramsey, 440 ft. from NE and 880 ft. from NW Sec. 83, Blk. 1, W.&N.W. ..... Location.

Miller et al's No. 1 Chapman, 225 ft. from NW and 285 ft. from SW line, Sec. 71, Blk. 1, W.&N.W. Sur. ..... Underreaming 12½-in. casing; total depth 620 ft.

Rush et al's No. 1 Wheat, 1,650 ft. from NW and 330 ft. from SW of Sec. 85, Blk. 1, W.&N.W. Sur. ..... Spudding 100 ft.

California Co.'s No. 2 Reagan & McElvain, 440 ft. from NW and SW Sec. 84, Blk. 1, W.&N.W. Sur. .... Drlg. 600 ft.

California Co.'s No. 4 Reagan & McElvain, 330 ft. from NE and 1,650 ft. from NW, Sec. 84, Blk. 1, W.&N.W... Rig.

Lee O. White et al's No. 1 Russell et al, 320 ft. from NW and 2,200 ft. from SW, Sec. 80, Blk. 1, W.&N.W... Rigging up.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. Sur. ..... Shut down 190 ft. for casing.

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ..... Drlg. 5,105 ft.

MENARD COUNTY

Barnett et al's No. 3 Callan City Co., 300 ft. from S and W, Sec. 1, B.S.&F. Sur. ..... Shut down 835 ft.; show oil 709-11 ft.

Panhandle Ref. Co.'s No. 2 Eckhart, 1,820 ft. from W and 1,320 ft. from S of Sec. 10, Blk. 2, T.W.N.G. Sur. ..... Drlg. 2,035 ft.

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.R.R. Sur. ..... Underreaming 8¼-in. casing at 2,160 ft.; total depth 2,180 ft.

MIDLAND COUNTY

Pure Oil Co.'s No. 1 Hutt, 2,310 ft. from N and 330 ft. from E of Sec. 14, Blk. 38, Twp. 4s, T.&P. Sur. ..... Dry and abandoned 4,227 ft.

MITCHELL COUNTY

Gant & Teas' No. 1 Handley, 330 ft. S and W parallel to section lines of NE cor. of SE, Sec. 12, Blk. 28, Twp. 1n, T.&P. Sur. ..... Shut down 3,115 ft.; show oil 2,946-3,104 ft.

Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. ..... Total depth 3,112 ft.; top pay 3,038 ft.; 1,000 ft. oil in hole swabbing 40 bbls. in 24 hrs.

Morrison et al's No. 1 Poe et al, 660 ft. S and 1,980 ft. W parallel to section lines of NE cor., Sec. 8, Blk. 27, T.&P. Sur. ..... Spudded 10 ft. and shut down.

PECOS COUNTY

Barnes et al's No. 1 Sanford, 160 ft. from NW and 157 ft. from SW of Sec. 55, Blk. 10, H.&G.N. Sur. ..... Drlg. 150 ft.

Black et al's No. 1 Pecos Valley Oil Co., 1,120 ft. from SE and 1,420 ft. from SW Sec. 34, Blk. 3, H.&T.C. Sur. ..... Drlg. 1,103 ft.

Buell & Hagan et al's No. 1-A Pecos Valley Oil Co., 150 ft. from NW and 1,470 ft. from NE of Sec. 22, Blk. 10, H.&G.N. Sur. ..... Shut down 1,547 ft.; estimated 2,000,000 ft. gas from 1,545-47 ft.

Fisher & Lowrie's No. 1 Webb, C Sec. 3, Blk. 203, Tilman & Walters Sur. ..... Shut down 3,256 ft.

Galt-Brown's No. 1 Neville, 2,265 ft. from E and 764 ft. from S, Sec. 74, Blk. 194, G.C.&S.F. ..... Drlg. 350 ft.

Hayes et al's No. 1 Lea, C NW of NE, Sec. 9, Blk. 106, T.&St. L. Sur. ..... Location.

G. A. Henshaw, Jr., Inc.'s No. 1 University, 1,650 ft. from S and 990 ft. from E, Sec. 32, Blk. 16 ..... Shut down 510 ft.; fishing.

Humble Oil & Ref. Co.'s No. 1 Kokernot, 1,320 ft. from N line and 1,467 ft. from W line of Sec. 227, Blk. 10, G.H.&S.A. Sur. ..... Drlg. plug 1,269 ft.

Humble Oil & Ref. Co.'s No. 1 Thompson, 1,980 ft. N and E of Sec. 96, G.C.&S.F. Sur. ..... Spudding.

Hussman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E, Sec. 83, Blk. OW, T.M.R.R. Sur. ..... Shut down 1,680 ft.

Independent O. & G. Co.'s No. 4 McDonald, 155 ft. from N and 2,485 ft. from E, Sec. 46, Blk. 12, H.&G.N. ... Drlg. 310 ft.

McCarty Oil Co.'s No. 2 Gray, 2,370 ft. from N and 450 ft. from W, Sec. 591, G.C.&S.F. Sur. ..... Drlg. 1,142 ft.

Messenger et al's No. 2 Byrne, 2,490 ft. from NE and SE of Sec. 54, Blk. 10, H.&G.N. Sur. ..... Shut down 1,367 ft.; top pay 1,264 ft.; flowing 93 bbls. daily.

Messenger et al's No. 1 Butz, 1,820 ft. from NW and 1,170 ft. from SW Sec. 54, Blk. 10, H.&G.N. Sur. ..... Spudding.

J. R. Miller et al's No. 1 Bennett, 359 ft. W from CWL, Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Drlg. 1,600 ft.

J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.&C.S.F. Sur. ..... Shut down 1,230 ft.

J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ..... Show oil 1,785 ft.; shut down 2,200 ft.

Oregon Oil Corp.'s No. 2 Yates, 150 ft. from S and W of Sec. 58, Blk. 1, I.&G.N. ..... Shut down 1,810 ft.

Peren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C. Sur. ..... Shut down 1,323 ft.

Perren's No. 1 Jackson, 200 ft. from NW and SW of Sec. 28, Blk. 3, H.&T.C. ..... Drlg. 1,110 ft.

Plymouth Oil Co.'s No. 1 Perry, 330 ft. from N and W Sec. 13, Blk. 194, G.C.&S.F. ..... Location.

Plymouth Oil Co.'s No. 4 Perry, 300 ft. from N and 420 ft. from E, Sec. 14, Blk. 194, G.C.&S.F. Sur. ..... Cellar.

R. W. Porpus et al's No. 1 State Land, 330 ft. S and W lines of NE, Sec. 28, Blk. OW, T.C.R.R. Sur. ..... Spudded and shut down.

Phillips Pet. Co.'s No. 3 Monroe, 3,860 ft. from N and 1,255 ft. from E, Sec. 39, Blk. 194, G.C.&S.F. ..... Shut down 816 ft.

Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Shut down 855 ft.

Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Location.

Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ..... Shut down 2,070 ft.

Southern Crude Oil Pur. Co.'s No. 2 Eaton, 2,310 ft. from SW and SE, Sec. 35, Blk. 3, H.&T.C. Sur. ..... Shut down 1,602 ft.; top pay 1,575 ft.; about 10 bbls. per hour.

California Co.'s No. 1 Fromme, 330 ft. from NE and NW Sec. 106, Blk. 10, H.&G.N. Sur. ..... Shut down 1,050 ft.

California Co. et al's No. 1 Thomas, 990 ft. from NW and SW of Sec. 31, Blk. 34, H.&T.C. ..... Location.

The Texas Company's No. 1 Wright, 660 ft. S and E of NW cor., Sec. 9, Blk. 131, T.&S.T.L. Sur. ..... Shut down 3,504 ft.

Transcontinental Oil Co.'s No. 1 University, 1,980 ft. N and E of SW cor., Sec. 18, Blk. 18, University Land.. Shut down 4,920 ft.

W. F. Walsh et al's No. 1 Scharbaur Cattle Co., 330 ft. S and 990 ft. E from C, Sec. 16, Blk. 136, T.&St. R.R. Sur. ..... Drlg. 2,550 ft.

Warner's No. 1 Webb, 2,550 ft. from NW and 6,100 ft. from NE of Sec. 311, Abst. 756, C. McGinley Sur. ..... Location.

Webb's No. 3 fee, 1,900 ft. from W and 223 ft. from S, Sec. 105, Blk. OW, G.C.&S.F. Sur. ..... Shut down 441 ft.; show gas at 410 ft.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N and 1,188 ft. from E lines of Sec. 245, Blk. 4 ..... Shut down 2,630 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land.. 9,442,000 ft. gas; averaged 915 bbls. per day for last 7 days; total depth 8,668 ft.

Beesley et al's No. 1 Sawyer Cattle Co., 1,320 ft. from N and 3,960 ft. from E, Sec. 8, J. G. Robinson Sur., elevation 2,586 ft. ..... Shut down 2,307 ft.

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ..... Top pay 8,220 ft.; total depth 8,220 ft.; averaging 45 bbls. per day.

Big Lake Oil Co.'s No. 5-C University, 625 ft. from S and 250 ft. from W of Sec. 25, Blk. 9 ..... Top salt 1,048 ft.; drlg. 1,730 ft.

Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 ..... Top pay 8,517 ft.; averaging 405 bbls. per day; 3,600,000 ft. gas; total depth 8,633 ft.

Westyde Investment Co.'s No. 1 Scott, 1,280 ft. N and 1,320 ft. from W, Sec. 177, Blk. 1, T.&P. Sur. ..... Drlg. 2,625 ft.

REEVES COUNTY

H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.

Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 50 ..... Shut down 1,860 ft.; show oil 1,820 ft.; cleaning out after two shots; filled up 200 ft. with oil.

Salsbury & Gregory's No. 1 Young Bell, 1,170 ft. from N and 330 ft. from E of Sec. 7, Blk. 5, H.&G.N. ..... Drlg. 260 ft.

Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur.. Show oil 3,410 ft.; shut down 3,575 ft.

California Co.'s No. 1 Kloh & Rumsey, 1,650 ft. from S and E of Sec. 13, Blk. 54, Twp. 4, T.&P. Sur. ..... Drlg. 2,346 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Shut down 580 ft.; show oil 2,303-95 ft.; gas pocket 2,303 ft.

Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. ..... Derrick.

George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ..... Show oil 2,028 ft.; shut down 2,643 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. ..... Shut down 4,060 ft.

Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Drlg. 6,802 ft.

Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. of Sec. 37, Blk. K, G.H.&S.A.R.R. Sur. ..... Drlg. 2,340 ft.

Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C.R.R. Sur. ..... Drlg. 600 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. ..... Fishing 4,912 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 320 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ..... 2,000 ft. oil in hole; total depth 3,320 ft.; fishing bit; top pay 1,750 ft.; swabbed 106 bbls. in 5 hrs.; filled up 600 ft. in 20 hrs. after swabbing.

Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ..... Shut down 4,367 ft.

Camp Springs Oil Co.'s No. 1 Strayhorn, 330 ft. from S and 1,980 ft. from W of Sec. 154, Blk. 3, H.&G.N... Shut down 471 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. ..... Spudded and shut down.

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Shut down 4,635 ft.

Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ..... Cleaning out; total depth 2,600 ft.

STERLING COUNTY

Mann et al's No. 1 Reed, 330 ft. from N and 2,310 ft. from W, Sec. 16, Blk. 14, S.P.R.R. ..... Drlg. 950 ft.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Wilson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ..... Location.

TAYLOR COUNTY

Clark et al's No. 1 Kendall, 250 ft. from N and W of farm in Willis Avery Sur. ..... Drlg. 300 ft.

Condor Pet. Co.'s No. 1 Stoker, C of NW, Sec. 220, Blk. 64, H.T.C.C.R.R. Sur. ..... Fishing 3,514 ft.

Gibson & Johnson's No. 1 Bingham, 330 ft. N and E of SW cor. their 270.8-acre tract, Sec. 31, Guadalupe County School Land ..... Total depth 2,412 ft.; drlg. by tools.

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ..... Show oil 4,917 ft.; shut down 6,001 ft.

Hucony Oil Co. et al's No. 1 Richie, C SE Sec. 10, Blk. A, S.P.R.R. Sur. ..... Shut down 1,080 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ..... Shut down 2,115 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C, Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.

Miller Bros.' No. 1 Allison & Burke, C NW cor., Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 120 ft.

Mrs. J. B. McPhees' No. 1 Sam Belt, C, Sec. 17, Blk. D-7, E.L.R.R. Sur. ..... Shut down 330 ft.; moved off machine.

Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ..... Drlg. 5,100 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 640 ft.

TERRY COUNTY

Atlantic et al's No. 1 Carlisle, 990 ft. from S and E of Sec. 58, Blk. E, E.L.&R.R. Sur. ..... Drlg. 4,675 ft.

TOM GREEN COUNTY

Cosden Oil Co.'s No. 1 William Anson, 2,310 ft. S, 330 ft. W of NE cor., Sec. 20, Blk. 24, H.T.C.R.R. Sur. ..... Spudded.

Ellis' No. 3 Lewis, 1,350 ft. S and 450 ft. E of SW cor. Jas. Webb Sur. 77, but in Albert Black Sur. 75 ..... Shut down 485 ft.; show oil 390 ft.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. F. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.

Phillips Pet. Corp.'s No. 1 Gulden, 1,250 ft. from N and 1,583 ft. W of Sec. 77, James Webb Sur. ..... Drlg. 3,870 ft.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N. Sec. 6, Blind Asylum Land ..... Show oil 418-20 ft.; total depth 622 ft.

UPTON COUNTY

Cordova Union Land Co.'s No. 1 fee, 330 ft. from S and E line of Sec. 1, Blk. 1, M.-K.-T.R.R. Sur. ..... Location.

Eppenauer Drlg. Co.'s No. 3 Chaney, 1,147 ft. from N and 990 ft. from W. Sec. 18, Blk. 3, M.-K.-T. Sur. .. Total depth 2,445 ft.

VAL VERDE COUNTY

A. Bluhm's No. 1 Yoast, 1,760 ft. N, 600 ft. W of SE cor., Sec. 31, Blk. 3, I.&G.N. Sur. ..... Location.
Independent Operators' No. 1 Whitehead, SE SE, Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,360 ft.
O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Drlg. 5,757 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 33, Blk. D-8, E.L.&R.R. Sur... Show oil 1,525 ft.; fishing 3,035 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sec. 47, Blk. Y.. Shut down 4,009 ft.

WARD COUNTY

Atlantic and Delmar's No. 7 Hayzlett, 2,070 ft. from NW and 1,878 ft. from SW, Sec. 17, Blk. 5, H.&T.C. Sur... Shut down 2,520 ft.; top pay 2,484 ft.; shot twice; cleaning out; averaging 75 bbls. per day.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water 2,545 ft.; plugged back to 2,477 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C.R.R. Sur. ..... Drlg. 600 ft.
Penn and Atlantic's No. 1-B Pecos Mercantile Co., 990 ft. from NW and 2,310 ft. from NE, Sec. 16, Blk. 34, H.&T.C. Sur. ..... Drlg. 820 ft.
Tex-Oil Prod. Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ..... Shut down 5,077 ft.
Richardson's No. 3 O'Brien, 322 ft. from N and 1,680 ft. from W of Sec. 5, Blk. F ..... Several sands showing oil and gas; shut down 2,750 ft.; swabbed total of 150 bbls.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17, is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ..... Standard rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Shut down 1,678 ft.
J. E. Smith's No. 1 Clement, 152 ft. SW of NE line and 153 ft. SE of NW line, Lot 7, Sec. 7, Blk. 32, H. & T.C.R.R. Sur. ..... Shut down 2,230 ft.; estimated 1,000,000 ft. gas.
Sturm & Paine's No. 1 Cummins, 748 ft. from NE and 155 ft. from NW of Sec. 7, Blk. 32, H.&T.C.R.R. Sur... Total depth 2,350 ft.; shut down
Sun Oil Co.'s No. 1 Sealy, 330 ft. from N and E of Sec. 88, Blk. F, G.M.M.B.&A. Sur. ..... Shut down 2,563 ft.

WINKLER COUNTY

Atlantic & Maxwell's No. 1 Daugherty, 1,650 ft. from S and 2,310 ft. from E, Sec. 16, Blk. 74, Public School Land ..... Drlg. 265 ft.
A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; show oil 2,775-85 ft.; fishing 2,980 ft.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Drlg. 3,973 ft.
Shell and The Texas Company's No. 1-B Cowden, 600 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ..... First gas 2,290 ft.; increase 2,580 ft.; total 3,500,000 ft. gas (estimated); moving in rotary; total depth 3,020 ft.; to test.
Simms Oil Co.'s No. 1 Sealy, C of SE Sec. 49, Blk. F, G.M.M.B.&A. Sur. ..... Shut down 880 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 62)

GRAY COUNTY

Amalgamated German-American Oil Co.'s No. 1 Webb, 330 ft. S and W, E½ NW, Sec. 12, Blk. A-9, H.& G.N. Sur. ..... S.D. 600 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Baer, 330 ft. S and W, NE, Sec. 126, Blk. 3, I.&G.N. Sur. ..... Rig.
Cockrell-McIlroy Oil Co.'s No. 1 Allam, 330 ft. N and E of E½ of NE¼, Sec. 127, Blk. 3, I.&G.N. Sur..... Drlg. 2,470 ft.
Cockrell-McIlroy's No. 1 Horner, 330 ft. S and E, NE, Sec. 139, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,963 ft.
Cockrell-McIlroy Oil Co.'s No. 1 Jackson, 330 ft. N and E, of E 110 ac., SE, Sec. 138, Blk. 3, I.&G.N. Sur. ... Location.
Continental Oil Co.'s No. 1 Wright, 330 ft. S and W, NW, Sec. 13, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,318 ft.
Continental Oil Co.'s Combs & Worley, 330 ft. S and E, NE, Sec. 38, Blk. 3, I.&G.N. Sur. ..... Location.
Danciger O. & R. Co.'s No. 2 Bradford, C SW NE, Sec. 148, Blk. B-2, H.&G.N. Sur. ..... S.D. 513 ft; cmtd. 15½-in. csg.
Danciger O. & R. Co.'s No. 1 Catlin et al, 175 ft. S, 300 ft. E of N 71 ac. of E 231 ac., Sec. 57, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,964 ft.
Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,505 ft.
Empire G. & F. Co.'s No. 1 Crow, 875 ft. N and W, NE, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Drlg. 315 ft.
Empire G. & F. Co.'s No. 1 Sailor, 330 ft. S and W, NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Rigging up.
Empire G. & F. Co.'s No. 1 Whittemore, 2,310 ft. N and W, Sec. 14, Blk. 4, I.&G.N. Sur. ..... Location.
Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.
Dick Graham's No. 1 Sullivan, 792 ft. N and W, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Location.

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Jewell Oil Co.'s No. 1 Harrah, 330 ft. N and W, of W 40 ac., S 120 ac., E 240 ac., Sec. 163, Blk. 3, I.& G.N. Sur. ..... Drlg. 2,260 ft.
LeFlore Pet. Corp.'s No. 1 Wilson, 330 ft. N and E, Sec. 1, B.S.&F. Sur. ..... Drlg. 2,560 ft.
Lenix et al's No. 1 Bradford, 330 ft. N and E, W½ SE, Sec. 118, Blk. B-2, H.&G.N.R.R. Sur. ..... 8,000,000 ft. gas 2,400 ft; 7,000,000 ft. gas 2,740 ft; T.D. 3,252 ft.; to P.B. for gas.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.&T.N. Sur. ..... S.D. 2,050 ft.
Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... 9,000,000 ft. gas 2,325-35 ft.; filling 2,775 ft.
Magnolia Pet. Co.'s No. 1 Sailor, 990 ft. S, 330 ft. W, E½ NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Rotary.
Magnolia Pet. Co.'s No. 2 Sailor, 330 ft. S and E, of E 80 ac., NE, Sec. 138, Blk. 3, I.&G.N. Sur. ..... Location.
McAuley et al's No. 4 Morse, 330 ft. N and W, SE cor. NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,175 ft.
Midwest Expltn. Co. et al's No. 1 Waggoner, 1,320 ft. W, 330 ft. N, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Drlg. 490 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Drlg. 1,780 ft.
Prairie Oil & Gas Co.'s No. 1 Carey, 372 ft. from W and 330 ft. from N of Sec. 114, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,860 ft.
Saulsbury et al's No. 1 Sheridan, 330 ft. S and E, W½ NE, Sec. 134, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,680 ft.
W. A. Scott's No. 1 Cobb, 330 ft. S, 425 ft. W, N½ SE, Sec. 134, Blk. 3, I.&G.N. Sur. ..... S.D. 2,270 ft.
Smith's No. 1 Morse, 200 ft. S, 330 ft. W, Sec. 6, Blk. 26, H.&G.N. Sur. ..... Drlg. 350 ft.
Smith & McDaniels' No. 1 Chapman, 990 ft. N and E, SW, Sec. 52, Blk. 25, H.&G.N. Sur. ..... S.D. 300 ft.
Reynolds et al's No. 1 Webb, 330 ft. N, 330 ft. E, NW, Sec. 60, Blk. 25, H.&G.N.R.R. Sur. ..... Fishing 2,550 ft.
The Texas Co.'s No. 2 Brown, 170 ft. N, 330 ft. E, NW, Sec. 137, Blk. 3, I.&G.N. Sur. ..... Location.
Tedesco Oil Co. et al's No. 1 Morse, 330 ft. N and W, NE SW, Sec. 1, Blk. 26, H.&G.N. Sur. ..... Spudding.
Vulcan O. & G. Co.'s No. 1 Carpenter, 330 ft. N and W, W 80 ac., NW, Sec. 25, Blk. 25, H.&G.N.R.R. Sur. ..... S.D. 2,810 ft; T.P. 2,740 ft; 1,000 ft. oil in hole.
Wilson et al's No. 1 Heaston, 330 ft. S and W, Sec. 160, Blk. B-2, H.&G.N.R.R. Sur. ..... 2,500,000 ft. gas 2,825 ft; drlg. 3,217 ft.

HUTCHINSON COUNTY

Danciger O. & R. Co.'s No. 1 Cheatham, 330 ft. N and E, SW SE, Sec. 38, Blk. Y, A.&B. Sur. ..... Set 8-in. csg. 3,025 ft.
Holmes et al's No. 3 Quinn, 330 ft. S and W, Sec. 7, Blk. 9, I.&G.N. Sur. ..... Rig on ground.
Huber & Co.'s No. 1 Christian, 330 ft. E and 990 ft. N of SW¼ Sec. 33, Blk. Y, A.&B. Sur. ..... S.D. 2,112 ft.
Phillips Pet. Co.'s No. 1 Johnson-Trammel, 930 ft. N, 330 ft. W, SE cor. W½ NW, Sec. 38, Blk. Y ..... T.D. 3,250 ft.
Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur..... S.D. 3,039 ft; P.B. to 2,683 ft.
Phillips Pet. Co.'s No. 1 Johnson-Rudy, 330 ft. W, 330 ft. S, SW SW, Sec. 30, Blk. Y, A.&B. Sur. ..... T.D. 3,346 ft; P.B. 2,975 ft; S.D.
Phillips Pet. Co.'s No. 1 Herring, 330 ft. N and E, W½, Sec. 7, Blk. X02, H.&O.B. Sur. ..... Rig.
Phillips Pet. Co.'s No. 1 Pease, 330 ft. S and E, Sec. 9½, Z. C. Collier Sur. ..... Spudded.
Phillips Pet. Co.'s No. 1 Vake (Hazel), 330 ft. N and W, Sec. 4, Blk. XO2, H.O.&B. Sur. ..... Drlg. 2,905 ft; 5,000,000 ft. gas at 2,750 ft.
Sinclair O. & G. Co.'s No. 1 Johnson Bros., 330 ft. N and E, NW, Sec. 32, Blk. Y, A.&B. Sur. ..... Drlg. 1,840 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... Drlg. 2,785 ft.
Spurlock et al's No. 1-A Christian, 440 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33, Blk. Y ..... S.D. 2,960 ft.
Texas Interstate P. L. Co.'s No. 1 Bost, 660 ft. N and E, Sec. 9, Blk. Y-2, T.T.R.R. Sur. ..... Drlg. 1,480 ft.

LAMB COUNTY

Graham O. & G. Co. et al's No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... S.D. 4,408 ft.

LIPSCOMB COUNTY

Brown et al's No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.G. 3,760 ft; S.D. 4,142 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... S.D. 4,954 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small S.O. 1,133-40 ft.; S.D. 4,161 ft.

MOORE COUNTY

Delmar Oil Co.'s No. 1 Jones, 990 ft. E, 330 ft. N, NW, Sec. 171, Blk. 3-T, T.&N.O. Sur. ..... Drlg. 1,745 ft.
Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. ..... Gas estimated 15,000,000 ft. 3,050-60 ft; T.D. 3,645 ft; to complete as gasser.
Shamrock O. & G. Co.'s No. 1 Shory, 330 ft. N and W, NE, Sec. 187, Blk. 3-T, T.&N.O. Sur. ..... 15,000,000 ft. gas 2,830-3,050 ft; rebldg. rig; T.D. 3,135 ft.; fishing.
Texas Interstate P. L. Co.'s No. 1 Zotness, C NW, Sec. 55, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 1,100 ft.
Texas P. L. Co.'s No. 1 Sneed, Jr., C NE, Sec. 46, Blk. 6-T, T.&N.O. Sur. ..... Drlg. 750 ft.

MOTLEY COUNTY

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M ..... C.O. 4,150 ft.
Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G. B.&B. Sur. ..... S.D. 580 ft.

POTTER COUNTY

Marshall Spivey's No. 1 Bivins, C SW, Sec. 39, Blk. M-20, G.&M. Sur. ..... Rigging up.
Canadian River Gas Co.'s No. 1 McBride estate "A," 4,950 ft. S, 330 ft. W, E½ S½, Sec. 98, Blk. 46, H. &T.C. Sur. ..... Location.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 50, Blk. K-14 ... S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 ..... Shot 10 qts. 5,270-93 ft.; S.O. 4-288 ft.; S.D. 5,993 ft.

WHEELER COUNTY

Anderson's No. 1 Reneau, C SW NE, Sec. 98, Blk. 23, H.&G.N. Sur. ..... S.D. 1,867 ft; 10,000,000 ft. gas 1,862-67 ft.
Johnson et al's No. 2 Hicks, 890 ft. W, 990 ft. S, Sec. 49, Blk. 17, H.&G.N. Sur. ..... Drlg. 1,450 ft.
Lone Star Gas Co.'s No. 3 Edwards-Trostle, C NE NW, Sec. 130, Blk. 23, H.&G.N. Sur. ..... Drlg. 1,575 ft.
Long et al's No. 1 Willington, 330 ft. S and W, NW, Sec. 3, Blk. 27, H.&G.N. Sur. ..... Spudding.
Magnolia Pet. Co.'s No. 2 Worley, 330 ft. N and W, NE, Sec. 39, Blk. 24, H.&G.N. Sur. ..... Location.
McGee et al's No. 1 Jolly, C NE, Sec. 15, Blk. A-8, H.&G.N. Sur. ..... T.D. 650 ft.
Murchison & Fain's No. 1 Magnolia Pet. Co., C SE NE, Sec. 54, Blk. 23, H.&G.N. Sur. ..... Drlg. 1,442 ft.
Murchison & Fain's No. 2 Purcell, C SW NW, Sec. 50, Blk. 17, H.&G.N. Sur. ..... Rig.
Wischkamper et al's No. 1 Kiser, 330 ft. N and E of SW¼ Sec. 33, Blk. 17, H.&G.N. Sur. ..... S.D. 1,385 ft.
Woodley et al's No. 1 Sloss & Admire, 660 ft. N, 330 ft. E, Sec. 47, Blk. 13, H.&G.N. Sur. ..... Spudded and S.D.

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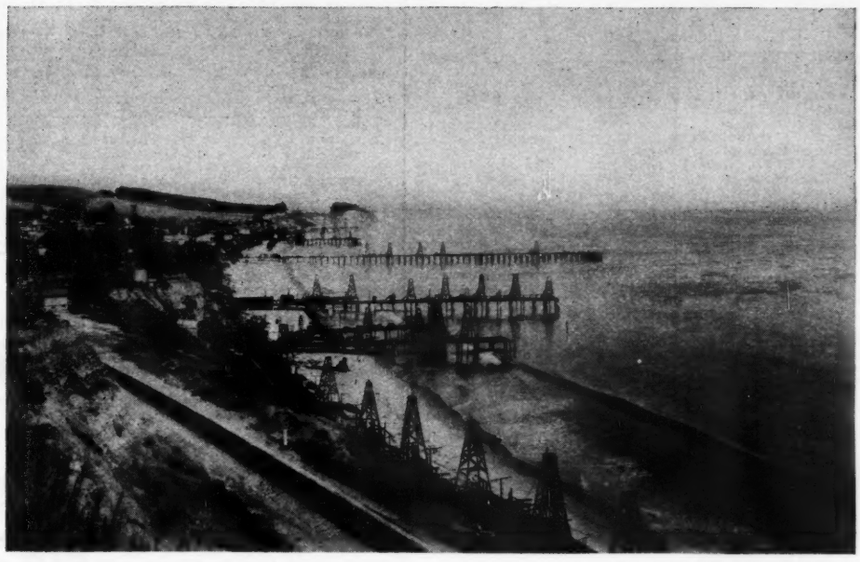

The Summerland field showing piers built to drill and pump shallow wells.
Photo courtesy National Petroleum News.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 106)

Interior Oil Co.'s (was Progressive Oil Co.'s) No. 1 Maya, C NE NE, Sec. 2-5-1e.....Derrick.
Jackson Oil Co.'s No. 1 Central Cotton Oil Co., NW cor. SW NW, Sec. 3-5-1e.....Derrick.
Jackson O. & G. Co.'s No. 1 Taylor, SE cor. SE, Sec. 35-6-1e .....S.D. igneous rock 3,233 ft.
Love Bros.' (was Love O. & G. Co.'s) No. 1 Bridges-Hilzim, 870 ft. N, 920 ft. W, SE cor., Sec. 35-6-1e...S.D. 240 ft.
Love O. & G. Co.'s No. 1 Gordon, SW cor. SW NW, Sec. 8-5-1e .....Derrick.
Love Pet. Co.'s (was Love O. & G. Co.'s) No. 2 Mendoza, NE cor. Lot 2, Sec. 13-5-1e.....Derrick.
Ohio Oil Co.'s No. 1 School, SE cor. N½ NE NE, Sec. 16-5-1e .....Derrick.
Mrs. Reeder et al's No. 1 State, SE cor. NW NW, Sec. 25-6-1e .....W.O.; T.D. 2,905 ft.
Tri-State O. & G. Co.'s No. 1 Wilson, SW cor. SE NE, Sec. 23-6-1e .....Derrick.
J. A. Weir et al's No. 1 Holliday & Ross, NW SE, Sec. 8-6-2e .....Rig up.

HUMPHREYS COUNTY

E. S. Steele et al's No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w .....Set 12½-in. 60 ft.; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16.....Tested S.W. 3,252 ft.; S.D. 3,420 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-15.....S.D.; W.O.; sandy shale 2,826 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-16-14.....Derrick.

LAFAYETTE COUNTY

Banks-Goode et al's No. 1 May, 113½ rds. S, 26 rds. E, NW cor. SW, Sec. 22-10-1w.....Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE cor. NE, Sec. 21-3-6 .....S.D.; W.O. 2,231 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19.....S.D. 2,912 ft.; bailer lost in hole.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19.....Shot 2,402-18 ft.; small show oil; arranging to shoot 2,387-95 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19 .....S.D. 3d ft.

RANKIN COUNTY

Gulf Ref. Co.'s No. 1 Rainey, NW NW, Sec. 13-5-1e.....Drlg. igneous rock 3,537 ft.
R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e..Drlg. 900 ft.
Interior Oil Co.'s No. 1 Moore, 660 ft. N, 660 ft. W, SE cor. NW NW, Sec. 28-6-2e.....S.D. 900 ft.
Pearl River O. & G. Co.'s No. 1 Littlefield, SE NE, Sec. 12-5-1e .....Cmtd. 6⅝-in. 2,380 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15.....S.D. 2,475 ft.; 2,350 ft. D.S. in hole; W.O.

YALOBUSHA COUNTY

Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, Sec. 14-11-4.....Reaming; T.D. 2,438 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 .....Drlg. sandy lime 5,133 ft.

ALABAMA

LAMAR COUNTY

Griggs & Knapp's No. 1 Wefel, Sec. 25-12-14.....T.A. 1,740 ft.

LAUDERDALE COUNTY

A. D. Morton et al's No. 10 O'Neal est., Sec. 8-2s-13w...Cmtd. 12½-in. 125 ft.; drlg. hard lime 905 ft.

MARION COUNTY

Hobson et al's No. 1 John Clark, SE. Sec. 29-11-14.....Derrick pattern.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2.....S.D.; W.O.; flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1.....Fishing bailer; T.D. 881 ft.
Oscar Brown's No. 2 Land & Cotton Co., Sec. 25-3-2w..Drlg. 700 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 46)

Magnolia Pet. Co.'s No. 2 Roberson, 330 ft. S, 330 ft. lock, 2970 ft. S, 990 ft. E, NW cor., Sec. 26-23-12....Plugged back to 2,960 ft; arranging preparations and shoot; T.D. 3,181 ft.
Nat. Gas Prod. Co.'s No. 3 U. S. Govt., 1,520 ft. S, 2,530 ft. E, NW cor., Sec. 31-23-11.....Fishing D.S; T.D. 3,160 ft.
Palmer Corp.'s No. 2 Roberson, 330 ft. N, 330 ft. E, SW cor. NW NE, Sec. 26-23-12.....Derrick.
The Texas Co.'s No. 1 Peyton, 660 ft. N, 330 ft. E, SW cor., Sec. 30-23-11.....Cmtd. 4½-in. 3,183 ft; bailing to test; T.D. 3,167 ft.
The Texas Co.'s No. 2 Hy Rose, 965 ft. E, 425 ft. N, C, Sec. 31-23-11 .....O.W.D.D; arranging to deepen; T. D. 3,075 ft.
The Texas Co.'s No. 4 Hy Rose, 1,000 ft. N, 330 ft. E, C, Sec. 31-23-11.....Cmtd. 6⅝-in. 3,159 ft.
The Texas Co.'s No. 12 Wilkinson, 990 ft. W, 330 ft. S, NE cor., Sec. 36-23-12.....Began drlg. July 1; drlg. 206 ft.
The Texas Co.'s No. 13 Wilkinson, 330 ft. S, 330 ft. W, NE cor., Sec. 36-23-12.....Began drlg. July 4; cmtd. 10-in. 227 ft; drlg. 3,000 ft.
Tippett Drlg. Co.'s No. 3 Holmes, 330 ft. N, 330 ft. E, SW cor. NE NW, Sec. 36-23-12.....300 ft. oil in hole; waiting on power; T.D. 3,180 ft.
Woodley et al's No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 22-23-12.....Surface csg. collapsed; W.O; T.D. 1,706 ft.

BOSSIER PARISH—ELM GROVE

Jones Chemical Co.'s No. 4 fee, 495 ft. N, 30 ft. E, SW cor. SE, Sec. 30-16-11.....Began drlg. July 3; cmtd. 10-in. 40 ft; drlg. 600 ft.

BOSSIER PARISH—SLIGO

La. G. & F. Co.'s No. 7 Thigpen & Herold, 660 ft. N, 660 ft. E. SW cor., Sec. 19-17-11.....Drlg. shale 2,280 ft.
Woodley Pet. Co.'s No. 1 Schuler, 660 ft. N, 660 ft. E, SW cor. NW, Sec. 13-17-12.....Drlg. 2,000 ft.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16.....Location.
Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,810 ft. S, 970 ft. E, NW cor., Sec. 17-16-16.....Location.
Calatex O. & G. Co.'s No. 1 Hudson, 2,395 ft. N, 660 ft. E, SW cor., Sec. 8-16-16.....Location.
Calatex O. & G. Co.'s No. 2 Taylor-Trosper, 45 ft. N, 1,320 ft. E, SW cor., Sec. 8-16-16.....Rig up.

CADDO PARISH—MOORINGSPORT

Falcon Oil Co.'s No. 1 Miller, 1,020 ft. N, 1,320 ft. E, SW cor., Sec. 29-20-15.....Derrick.
Falcon Oil Co.'s No. 4 Muslow, 200 ft. W, 1,270 ft. S, NE cor., Sec. 29-20-15.....Location.
Falcon Oil Co.'s No. 4 Nunnally, 3,004 ft. N, 3,150 ft. E, SW cor., Sec. 29-20-15.....W.O.S.R; 300 ft. oil; T.D. 3,340 ft.
Gulf. Ref. Co.'s No. 1 Leonard fee, 3,623 ft. N, 2,486 ft. E, SW cor., Sec. 29-20-15.....Began drlg. July 9.
The Texas Co.'s No. 4 Leonard fee, 1,520 ft. W, 200 ft. S, NE cor., Sec. 29-20-15 .....Location.
The Texas Co.'s No. 5 Leonard fee, 2,440 ft. W, 200 ft. S, NE cor., Sec. 29-20-15 .....Location.

CADDO PARISH—OIL CITY

P. T. Mize's No. 2-A La. Oil Ref. Corp., 200 ft. N, 200 ft. E, SW cor., Sec. 6-20-15.....Drlg. chalk 1,445 ft.
The Texas Co.'s No. 73 Levee Board, 1,642 ft. E, 780 ft. N, SW cor. SW SE, Sec. 27-21-16.....Location.

DE SOTO PARISH—HOLLY

Ark. Fuel Oil Co.'s No. 2 Scott, 330 ft. N, 330 ft. E, SW cor. SE NE, Sec. 32-14-13.....Swbd. 35 bbls. oil, 20 bbls. S.W. 2,781 ft; W.O.S.R. 2,790 ft.
Lacy Oil Co.'s No. 1 G. W. Sample, 300 ft. S, 300 ft. W, NE cor. NW NE, Sec. 1-13-14.....D.S. test 2,916 ft; S.W; drlg. 1, 920 ft.
Standard Oil Co.'s No. 1-D Farmer (was R. O. Roy's), 330 ft. N, 330 ft. E, SW cor. SE, Sec. 32-14-13.....Derrick.

LA SALLE PARISH—URANIA

W. O. Clark's No. 1-B Russell, Sec. 25-10-1e.....Coring 1,470 ft.
Montugu Oil Co.'s No. 8 Zenoria Lbr. Co., 710 ft. S, 350 ft. W, NE cor., Sec. 10-9-1e.....Cmtd. 6⅝-in. 1,499 ft; W.O.S.R. 700 ft. oil; 700 ft. S.W; T.D. 1, 510 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4.....Location.
J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5 .....D.S. test 3,263 ft; S.W; drlg. 3, 270 ft.
Industrial Gas Co.'s No. 1 fee, 1,980 ft. S, 660 ft. W, NE cor., Sec. 3-20-4 .....Drlg. shale and boulders 2,080 ft.
La. G. & F. Co.'s No. 1 Archie, 627 ft. S, 1,957 ft. E, NW cor. SW, Sec. 22-20-4.....Began drlg. July 6; cmtd. 12½-in. 160 ft.
La. G. & F. Co.'s No. 26 Crossett, 645 ft. E, 574 ft. S, NW cor. Lot 9, Sec. 33-21-5.....Cmtd. 9-in. 972 ft.
Southern Carbon Co.'s No. 56 fee, 660 ft. S, 660 ft. E, NW cor. NW, Sec. 15-20-4.....Cmtd. 12-in. 170 ft; 8-in. 841 ft.

OUACHITA PARISH

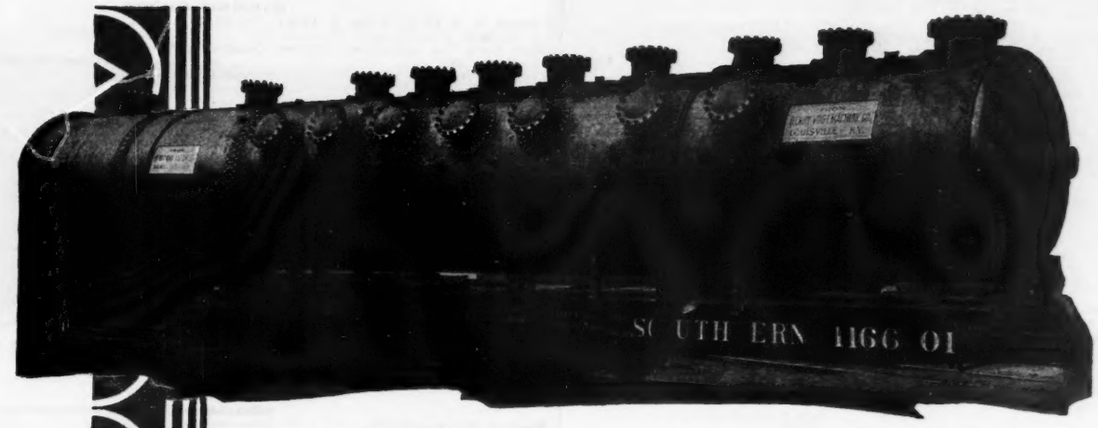
Amalgamated Co.'s No. 1-B Kate Cole, 660 ft. N, 660 ft. E, SW cor. NE SW, Sec. 25-20-4.....Rig up.
Ark.-La. P. L. Co.'s No. 4 McEnery, 1,320 ft. N, 760 ft. E. SW cor., Sec. 29-19-4.....Cmtd. 6⅝-in. 2,145 ft.
Carbon Consolidated, Inc.'s No. 5 Guthrie (was United Oil & Nat. Gas Co.'s No. 5 Guthrie), 6,634 ft. N, 7,078 ft. W, cor. Secs. 49, 25 and 26, in Sec. 50-20-4..Began drlg. July 3; cmtd. 12-in. 156 ft; drlg. 730 ft.
Hope Prod. Co.'s No. 4 Fairbanks, 616 ft. W, 623 ft. S, NE cor., Sec. 36-20-4.....Drlg. 1,900 ft.
Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4.....Location.
Jordan Drlg. Co.'s No. 1 J. P. Parker, 950 ft. N, 485 ft. W, cor. Secs. 41, 9 and 16, in Sec. 41-18-4.....Location.
Jordan Drlg. Co.'s No. 2 Pereboom, 1,207 ft. W, 264 ft. S, C, Sec. 9-18-4.....Began drlg. July 3; cmtd. 12½ in. 178 ft; 8-in. 765 ft; drlg. 800 ft.
Jordan Drlg. Co.'s No. 1 School, 216 ft. S, 244 ft. W, NE cor. NW, Sec. 16-18-4.....Location.
La. G. & F. Co.'s No. 3 Breard, S 9° 734 ft., S 81° E 594 ft., NW cor., Sec. 44-18-4.....S.D. high wtr; T.D. 1,300 ft.
Pipes & Mack's No. 1 Union Gas Products Co., Inc., 1,598 ft. W, 297 ft. N, SE cor. SW, Sec. 7-18-5.....Tested dry 2,460 ft; W.O. 2,500
Pipes & Mack's No. 2 Union Gas Products Co., 296 ft. W, 528 ft. N, SE cor. SW, Sec. 7-18-5.....Location.
United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4.....Location.
United O. & N. G. Co.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 36-20-4.....Derrick.

RICHLAND PARISH

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6.....Rig up.
Franklin O. & G. Co.'s No. 1 Thompson, 660 ft. N, 165 ft. W, SE cor. NE Sec. 14-16-6.....Location.
Hope Prod. Co.'s No. 1 A. H. Brown, 1,932 ft. N, 1,009 ft. W, SE cor., Sec. 22-16-6 .....Rig up.
Hope Prod. Co.'s No. 1 J. E. Duff, 660 ft. N, 1,980 ft. W, SE cor., Sec. 15-16-6 .....Rig up.
International Gas Prod. Co.'s No. 1 Minnie LaGrone, 769 ft. N, 858 ft. E, SW cor., Sec. 7-16-7.....Location.
La. G. & F. Co.'s No. 1-C McCoy, 872 ft. W, 1,749 ft. N, SE cor., Sec. 8-16-6.....Began drlg. July 7; cmtd. 12½ in. 177 ft.
Northern La. Nat. Gas Co.'s No. 2 L. R. Hemler, 1,990 ft. E, 663 ft. N, SW cor. NW, Sec. 23-16-6 .....Location.
Palmer Corp.'s No. 1-B Boykin, 177 ft. S, 787 ft. E, C, Sec. 33-17-6 .....Derrick.
Palmer Corp.'s No. 1 Brown, 1,320 ft. S, 659 ft. W, NE cor. NW NE, Sec. 27-16-6.....Rig up.
Palmer Corp.'s No. 1 Newberry, 3,296 ft. N, 2,640 ft. W, SE cor., Sec. 2-16-6.....Cmtd. 6-in. 2,300 ft.
Palmer Corp.'s No. 1 N. D. Thomason, 1,320 ft. S, 660 ft. E, NW cor. NW, Sec. 22-16-6.....Cmtd. 6-in. 2,300 ft.
Richland Prod. Co.'s No. 1 Brown, 1,179 ft. S, 792 ft. W, NW cor. NE SE, Sec. 22-16-6.....Cmtd. 8-in. 894 ft; drlg. 1,105
Richland Prod. Co.'s No. 1 Hale, 660 ft. S, 660 ft. E, NW cor. NE, Sec. 22-16-6.....Rig up.
Southern Carbon Co.'s No. 1-B Hallock, 1,622 ft. N, 990 ft. W, SE cor. NW, Sec. 1-16-6.....Began drlg. June 13; cmtd. 12-in. 185 ft; 8-in. 865 ft.
Southern Carbon Co.'s No. 1-B Hemler, 660 ft. N, 1,435 ft. E, SW cor., Sec. 1-16-6 .....Location.
Southern Carbon Co.'s No. 1 H. H. Hemler, 619 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6.....Cmtd. 6-in. 2,300 ft.
Southern Carbon Co.'s No. 1-C M. L. McCoy, 1,880 ft. N, 2,871 ft. E, SW cor., Sec. 1-16-6.....Cmtd. 6-in. 2,300 ft.
Southern Carbon Co.'s No. 2-C M. L. McCoy, 1,880 ft. N, 5,024 ft. E, SW cor., Sec. 1-16-6.....Location.
Southern Carbon Co.'s No. 5 F. B. and E. A. Sartor, 1,156 ft. E, 531 ft. S, NW cor. SW, Sec. 19-16-6.....Began drlg. July 3; cmtd. 12-in. 190 ft; 8-in. 795 ft.
Southern Carbon Co.'s No. 6 F. B. and E. A. Sartor, 2,640 ft. N, 2,031 ft. W, SE cor., Sec. 24-16-5.....Location.
Southern Carbon Co.'s No. 1-C T. R. Sartor, 660 ft. S, 660 ft. W, NE cor., Sec. 29-16-6.....Drlg. 1,875 ft.
Southern Carbon Co.'s No. 1 H. L. Thomason, 1,980 ft. S, 665 ft. E, NW cor., Sec. 11-16-6 .....Location.
Southern Carbon Co.'s No. 1-B Thomason et al, 2,310 ft. W, 100 ft. S, NE cor., Sec. 23-16-6.....Location.
Southern Carbon Co.'s No. 1-C Thomason, 1,980 ft. N, 660 ft. W, SE cor., Sec. 14-16-6 .....Location.
Southern Carbon Co.'s No. 1-D Thomason, 1,320 ft. S, 660 ft. W, NE cor., Sec. 31-16-6.....Location.
United Carbon Co.'s No. 1 E. W. Dunning, 1,270 ft. S, 660 ft. W NE cor., Sec. 26-16-6 .....Cmtd. 6-in. 2,300 ft.
United Carbon Co.'s No. 1 R. B. McGowan, 665 ft. E, 660 ft. S, NW cor. SW, Sec. 16-17-6 .....Began drlg. July 6; cmtd. 12-in. 190 ft.
United Carbon Co.'s No. 1 H. L. Thomason, 660 ft. N, 660 ft. E, SW cor., Sec. 2-16-6 .....Cmtd. 6-in. 2,300 ft.

SABINE PARISH—PLEASANT HILL

Ark. Fuel Oil Co.'s No. 14 Logan, 1,035 ft. N, 241 ft. W, C, Sec. 33-10-12.....Began drlg. July 3; cmtd. 10-in. 100 ft; drlg. 824 ft.
J. M. Bridges, trustee's No. 1 Cook Land Co., Sec. 34-10-12 .....Began drlg. July 3; cmtd. 10-in. 148 ft.
Bridges-Clark Oil Co.'s No. 2 J. W. Guy, 330 ft. S, 330 ft. W, NE cor. SE SE, Sec. 33-10-12.....Cored sand showing oil and gas 3,194 ft; cmtd. 5⅝-in. 3,164 ft; swbng. to test 3,194 ft.



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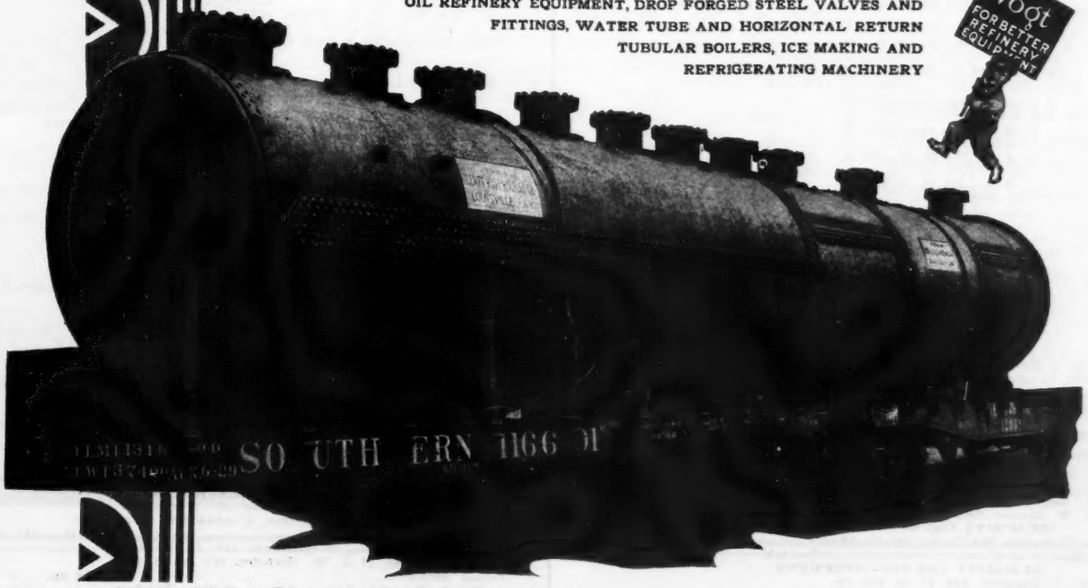


F. A. Bartlett, Jr.'s No. 1 Logan, 200 ft. S, 200 ft. E, NW cor., Sec. 27-10-12.....Rig up.
Standard Oil Co.'s No. 2 Ives, 330 ft. N, 330 ft. E, SW cor. SE SW, Sec. 34-10-12.....Sidetracking D.S. 3,350 ft; T.D. 3,278 ft.

SABINE PARISH—ZWOLLE

Central Pet. Co.'s No. 1 Baptist Church (was No. 1 Wall), Zwolle townsite in Sec. 31-8-12.....Bailed dry; W.O. 2,590 ft.
Tom Davis' (was T. D. Allison's) No. 1 Holliday, Sec. 31-8-12 Zwolle townsite .....S.D. wtr. 1,350 ft.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 4 Bowman-Hicks, 330 ft. N, 330 ft. W, C, Sec. 34-8-12 .....T.A. 2,669 ft.
Loring Oil Co.'s (formerly Benedum & Trees Oil Co.'s) No. 5 Bowman-Hicks, 900 ft. S, 1,400 ft. W, C, Sec. 34-8-12 .....Cored hard lime 4,000 ft.
Loring Oil Co.'s No. 8 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SE, Sec. 33-8-12.....Cored hard chalk 2,593 ft; T.A. 2,700 ft.
Loring Oil Co.'s No. 10 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor. NE SE, Sec. 33-8-12.....Bailing and swbng. 2,432 bbls.
Loring Oil Co.'s No. 11 Bowman-Hicks, Sec. 34-8-12.....Drlg. gummy shale 1,653 ft.
Loring Oil Co.'s No. 1 Gardner, 330 ft. N, 330 ft. W, SE cor. NE, Sec. 27-8-12.....Cmtd. 6⅝-in. 2,310 ft; T.D. 2,327 ft.
Loring Oil Co.'s No. 1 Schull, 330 ft. S, 330 ft. E, NW cor. SW, Sec. 36-8-12.....Arranging to cmt. 6⅝-in. 2,381 ft.
Glassell & Merren's No. 1 Thomas, Lot 18, Block 3, Zwolle townsite, Sec. 31-8-12.....Oil show; S.D; W.O. 2,600 ft
H. E. Granville's No. 1 Parrott, 1,052 ft. S, 661 ft. E, NW cor., Sec. 31-8-12.....W.O.S.R. 2,520 ft.
F. M. Hood's No. 1-B (was No. 2) Winston, 700 ft. E, 425 ft. S, NW cor., Sec. 31-8-12, Zwolle townsite...S.D. 1,065 ft.
Ohio Oil Co.'s No. 5 Bowman-Hicks, 330 ft. N, 330 ft. E, SW cor., Sec. 33-8-12.....Coring black shale 2,230 ft.
Olson Bros.' No. 2 Boone-Ferguson, 330 ft. N, 330 ft. W, SE cor. NW SE, Sec. 33-8-12.....Began drlg. July 2; cmtd. 10-in. 102 ft; drlg. 2,270 ft.
W. D. Perritt et al's No. 1 Elliott, 150 ft. N, 150 ft. E, SW cor. SW SE SW, Sec. 30-8-12 .....Rig up.
Philp Bros.' No. 1 Dow, Lot 1, Blk. 18, Zwolle townsite, Sec. 31-8-12..... .....Bailed dry 2,300 ft.
Posey et al's No. 1 Peterson, Blk. 16, Zwolle townsite, Sec. 31-8-12..... .....S.D. 250 ft.
Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor., Sec. 4-7-12.....T.A. 2,640 ft.
Ruston Drlg. Co.'s No. 1-A Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SW, Sec. 35-8-12.....T.A. 2,690 ft.
A. H. Tarver's No. 3 Sabine State Bank, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 26-8-12.....Rig up.
Wheatcroft et al's No. 1 Sabine Lbr. Co., SW NE, Sec. 31-8-12 .....Cmtd. 6⅝-in. 2,161 ft; top chalk 2,165 ft.
Wilder et al's No. 1 Parrott, Sec. 31-8-12..... .....Cmtd. 6⅝-in. 2,200 ft.

SABINE PARISH—BLUE LAKE

R. L. Gay's No. 8 Bowman-Hicks, Sec. 18-7-13.....Bailed dry 2,494 ft; stood 3 wks.; W.O.; 1,000 ft. oil.
Ruston Drlg. Co.'s No. 1-B Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor., Sec. 24-7-14.....Tested dry 2,470 ft; T.A.

UNION PARISH

Nemours Corp.'s No. 1 Digby, 1,989 ft. E, 660 ft. S, NW cor., Sec. 15-21-3 .....Cmtd. 8-in. 803 ft.
Nemours Corp.'s No. 2 Hollis, 817 ft. S, 995 ft. W, NE cor. NW, Sec. 11-20-3.....Location.
Stovall Drlg. Co.'s No. 1 Murray, 1,650 ft. N, 330 ft. W, SE cor. SW, Sec. 32-23-4.....Rig up.
J. P. White's No. 1 Howard, 660 ft. S, 660 ft. W, NE cor., Sec. 32-20-3e .....Cmtd. 6-in. 2,133 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Ideal O. & G. Co.'s No. 1 Coyle, 300 ft. N, 300 ft. E, SW cor. SW SE, Sec. 24-23-11.....Derrick.
H. M. Jones Drlg. Co.'s (was E. W. Bateman's) No. 2 Cook, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 2-22-11 .....Drlg. 2,100 ft.
H. M. Jones Drlg. Co.'s No. 1 Womble, 860 ft. S, 200 ft. E, NW cor. SW, Sec. 1-22-11.....Derrick.
K. C. Supply Co.'s No. 1 Cochrane, 330 ft. N, 330 ft. W, SE cor. E½ NW, Sec. 36-23-11.....Plugged back to 2,713 ft; T.D. 2,726 ft.
Magnolia Pet. Co.'s No. 2 Sally Coyle, 150 ft. N, 150 ft. W, SE cor. SE NE, Sec. 2-22-11.....Derrick.
Magnolia Pet. Co.'s No. 1 Gardner, 175 ft. N, 230 ft. E, SW cor. SE NW, Sec. 1-23-11.....W.O.S.R. 2,727 ft.
Magnolia Pet. Co.'s No. 4 Scroggins, 150 ft. N, 150 ft. E, SW cor. SW NW, Sec. 1-22-11.....Began drlg. July 3; cmtd. 16-in. 278 ft; drlg. 1,127 ft.
Merrick Oil Corp.'s No. 3 Slack, 330 ft. N, 330 ft. W, SE cor. SW SE, Sec. 36-23-11.....Derrick.
Sarepta Oil Co.'s No. 3 Gardner, 396 ft. N, 78 ft. E, SW cor. NW NW, Sec. 6-22-10.....Derrick.
S. H. Riggs, trustee's No. 1 L. & A., 250 ft. S, 530 ft. E, NW cor. NW NE, Sec. 1-22-11.....S.D. 2,100 ft.
S. H. Riggs, trustee's No. 2 L. & A., 255 ft. S, 600 ft. W, NE cor. SW NE, Sec. 36-23-11.....Derrick.
S. H. Riggs, trustee's No. 3 L. & A., 255 ft. N, 600 ft. W, SE cor. NW SE, Sec. 36-23-11.....Location.
S. H. Riggs, trustee's No. 4 L. & A., 255 ft. S, 600 ft. W, NE cor. NW SE, Sec. 36-23-11.....Location.
W. O. Neely's No. 1 J. R. Slack, 150 ft. N, 150 ft. E, SW cor., Sec. 12-22-11.....Location.
Sarepta Oil Co.'s No. 2 Gardner, NE SW, Sec. 1-22-11...Rig up.
Sarepta Oil Co.'s No. 1 Slack, SW cor. NW NE, Sec. 36-23-11 .....Rig up.
Wingfield et al's No. 2 Slack, 163 ft. S, 140 ft. E, NW cor. NE, Sec. 1-22-11.....Cmtd. 6-in. 2,720 ft.
Wingfield et al's No. 3 Slack, 132 ft. S, 760 ft. E, NW cor. NE, Sec. 1-22-11.....Cmtd. 6-in. 2,726 ft.

ARKANSAS
JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 1 Cline, 660 ft. S, 660 ft. W, NE cor. NE SE, Sec. 16-10-24.....Drlg. hard shale 2,225 ft.
Blackwell O. & G. Co.'s No. 1 Western Coal & Mining Co., C NE SE, Sec. 20-9-25.....Arranging to cmt. 8¼-in. t. 160 ft.
Conn Grable's No. 1 Hoeing, 720 ft. N, 590 ft. W, SE cor., Sec. 20-9-25 .....Began drlg. June 18; cmtd. 10-in 100 ft; 8¼-in. 1,160 ft.

NEVADA COUNTY

Roy Davis et al's No. 1 Chas. Henry, 1,120 ft. N, 1,120 ft. W, SE cor., Sec. 10-12-20.....Rig up.
C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20.....S.D. 2,810 ft.

OUACHITA COUNTY—SMACKOVER

Standard Oil Co.'s No. 7 Farris, 200 ft. S, 200 ft. W, NE cor. NW NW, Sec. 34-15-15.....Derrick.

OUACHITA COUNTY—STEPHENS

Magnolia Pet. Co.'s No. 1 Grayson, 230 ft. S, 540 ft. W, NE cor. Lot 31, Sec. 21-15-19.....O.W.D.D; completed March 19 1930; produced 100 bbls. oil 225 bbls. S.W. 1,480 ft; cored sand showing oil 2,123 ft.

UNION COUNTY—CHAMPAGNOLLE

Lion Oil Ref. Co.'s No. 2 Kelly, Sec. 9-17-14.....O.W.D.D; completed Apr. 4, 1929; 6,800,000 ft. gas 2,822 ft; perforated csg. 2,735-60 ft; arranging 4½-in. csg. 3,166 ft; cored S.W. sand 3,171-84 ft; T.D 3,195 ft; W.O.S.R; 600 ft. oil; T. D. 3,195 ft.
Magnolia Pet. Co.'s No. 1 Gregory, Sec. 15-17-14.....O.W.D.D; milling csg. 2,658 ft; old T.D. 2,851 ft.
Sundby et al's No. 2 Perdue, 75 ft. S, 150 ft. E, NW cor., Sec. 33-16-14.....S.D. 3,205 ft.

UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15.....S.W. 2,214 ft.
Malloy & Co.'s No. 1 Murphy, Sec. 1-18-16.....Rig up; W.O.
Malloy & Co.'s No. 3 Robertson, NE cor. S½ SW NE, Sec. 6-18-15 .....Location.

EAST TEXAS
HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Agura, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. .....Location.
Shell Rock Pet. Co.'s No. 1 Oliver Dougherty, W. D. Burris Sur. .....Milling out junk; T.D. 3,445 ft.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 2-A G. W. Brumble, 477 ft. W, 473 ft. S, NW cor. Jno. Womack Sur. in B. C. Jordan Sur. .....Drlg. 3,462 ft.
Jackson et al's No. 1 Dunham, 150 ft. W, 150 ft. N, SE cor. M. I. Dunham 29 ac., in Chas. Haley Sur. ..Began drlg. July 3; cmtd. 10-in. 40 ft; top chalk 1,205 ft; drlg. 1,500 ft.
Nat. Gas Products Co.'s No. 3 Tom Moore, 889 ft. E, 7,928 ft. S, NW cor. B. C. Jordan Sur. .....Drlg. 2,460 ft.
The Texas Co.'s No. 10 G. W. Brumble, SE cor., E. F. Mitcheson Sur. .....Rig up.
The Texas Co.'s No. 11 G. W. Brumble, 2,814 ft. N, 700 ft. W, SE cor., E. F. Mitcheson Sur. .....Location.
Doris Thomason's No. 15 Crenshaw, 1,992 ft. S, 2,305 ft. E, SW cor. Jno. Womack Sur. in B. C. Jordan Sur. .....Derrick.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 49)

BROOKS COUNTY

Houston Oil Co. of Texas' No. 1 Wormser-Holbien, 1,550 ft. S, 2,650 ft. E of intersection of Lisandro Saenz & Manuel Saenz tracts, El Palo & Blanco de Maguellas grant, SW of Lasater discovery gas .....Location.
Houston Oil Co.'s No. 2 Wormser, 200 ft. N of CSL, 964-ac. tract in the P. Maguellas Sur. .....T. D. 1,200 ft.; drlg.
Humble Oil & Ref. Co.-Shell Pet. Corp.'s No. 2 Wm. Singels, 1,320 ft. W of E line, 1,800 ft. S of N line of Sec. 312, Alta Verde area, 7 miles SE from Lasater gas field .....T. D. 3,420 ft.; drlg. in sandy shale.

BEXAR COUNTY

Moore-Jauer's No. 1 Holly R. Ellison .....T. D. 2,110 ft.; set csg. to test sand.
K. M. S. Petroleum Co.'s No. 1 E. Salicky, 132 ft. from E line, 10 ft. S line of tract, Blk. 15, Mission Gardens .....Location.
Morgan Bros.' No. 1 Barkmeyer, 1,650 ft. to N line, 600 ft. to W line of 600-ac. tract in the P. Villapando Sur., 8 miles SE from San Antonio .....T. D. 700 ft.; shut down.
J. M. Russell's No. 1 F. L. Price, 1,590 ft. to N line, 660 ft. W line of tract in Angel Navarro Sur. ....T. D. 50 ft.; shut down.
J. M. Russell's No. 1 A. O. Miles, 1,600 ft. N line, 600 ft. W line 450-ac. tract, Angel Navarro Sur., 10 miles S from San Antonio .....T. D. 700 ft.; shut down.
Swearingen Oil Co.'s No. 5 fee, 30 ft S of No. 4, Sur. 52 .....Location.
Swearingen Oil Co.'s No. 1 J. Halverdin, 1,997 ft. W line, 150 ft. SW line of 109-ac. tract in the J. Perege No. 52 Sur. .....Location.
Henry Yelvington et al's No. 1 Beck, 355 ft. from W line, 310 ft. from S line 100-ac. tract, SW cor. of P. W. Hays Sur., 7 miles E from San Antonio .....T. D. 1,470 ft.; shut down.
Louis Wentz' No. 1 J. Cassiano, 150 ft. N and E line of J. Cassiano 400 ac. in J. Monte Sur. .....T. D. 2,325 ft.; drlg. in Edwards.

CALDWELL COUNTY

J. T. Callahan's No. 1 W. H. Callahan, 630 ft. S line, 2,280 ft. W line 176-ac. tract in the J. R. Miller Sur. .....Location.
W. E. Allaun's No. 1 Cosey, SW cor. of tract .....Location.
W. E. Allaun's No. 2 McKean, 300 ft. W of No. 1 .....Location.

COLORADO COUNTY

Penn Oil Co.'s No. 1 H. C. Wilson, 450 ft. from W line, 450 ft. from E line of 50-ac. tract in the John McCrosky Sur., 5 miles E from Columbus .....T. D. 3,150 ft.; drlg. in sand and shale.

DEWITT COUNTY

H. T. Roe's No. 1 Leinhardt .....T. D. 2,215 ft.; installing heavier rig.

DUVAL COUNTY

Vacuum Oil Co.'s No. 1 C. W. Hahl, Sur. 280 .....Location.
Sal Oil & Gas Co.'s (Southern Oil Co.) No. 2 Welder-Wood, 1,980 ft. E line, 2,490 ft. N line Sur. 215 .....T. D. 700 feet; standing; drlg. water well.
T. W. Callahan and W. M. Howard's No. 1 J. M. Luby, 3,960 ft. N line, 3,960 ft. W line Sur. 24 .....T. D. 3,560 ft.; drlg.
Putnam & Walsh's No. 1 Hagist, 570 ft. N line, 150 ft. E line, Blk. 5, Sur. 269 .....T. D. 1,500 ft.; testing through tester.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 330 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 .....T. D. 3,880 ft.; drlg.
James Dalglish-Morrow's No. 1 Peterson, NW cor., Sec. 82, B K. E, H.E.&W.T.R.R., NE cor. of county in the H.E.&W.T.R.R. Sur. .....T. D. 100 ft.; drlg.

GOLIAD COUNTY

Union Prod. Co.'s No. 12 George Ray, 2,350 ft. SW of NE line, 330 ft. NW of SE line George A. Ray 400 ac. in the Wm. Southerland Sur. .....T. D. 2,050 ft.; drlg. in shale.
A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexter Sur. .....T. D. 1,510 ft.; drlg. in shale.
Wm. F. Morgan's No. 1 Peirrie, 7,600 ft. SW of NE line, 2,550 ft. SW of NW line of Fannie Peirrie 2,350-ac. tract, SW part of county in the Vincente Ramon Sur. .....T. D. 5,535 ft.; drlg.

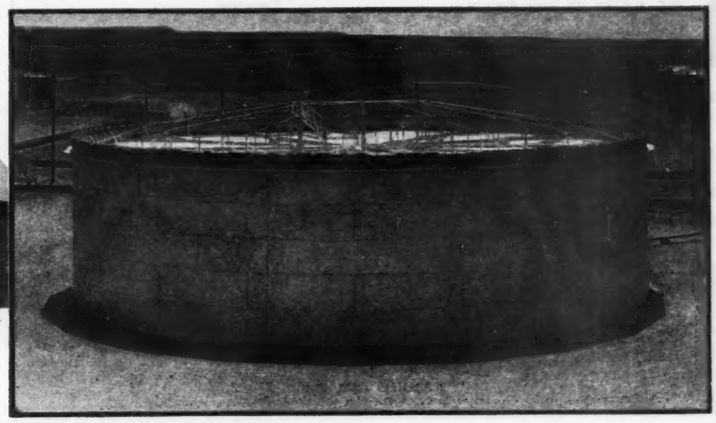
GONZALES COUNTY

Mardon Oil Co.'s No. 1 Boirer, 150 ft. N and W lines in the James Stewart Sur., 5 miles NW from Waelder .....T. D. 1,850 ft.; shut down
Linden Pet. Corp.'s No. 1 Hemsley, 650 ft. N line, 1,110 ft. W line of J. W. Hemsley 100 ac. in the James Smith .....Rig up.
Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur. .....T. D. 2,350 ft.; shut down
A. J. Keiffer et al's No. 1 B. B. Dix, 5,550 ft. W of E line, 2,775 ft. N of S line (Guadalupe River) in the Ira Nash Sur., 4 miles SE from Darst Creek .....T .D. 2,800 ft.; shut down
Finnell & Elam's No. 1 J. F. Robinson, 2,000 ft. N line, 4,420 ft. E line, in the J. H. Livergood, 2½ miles NE from Waelder .....T. D. 2,545 ft.; shut down

GUADALUPE COUNTY

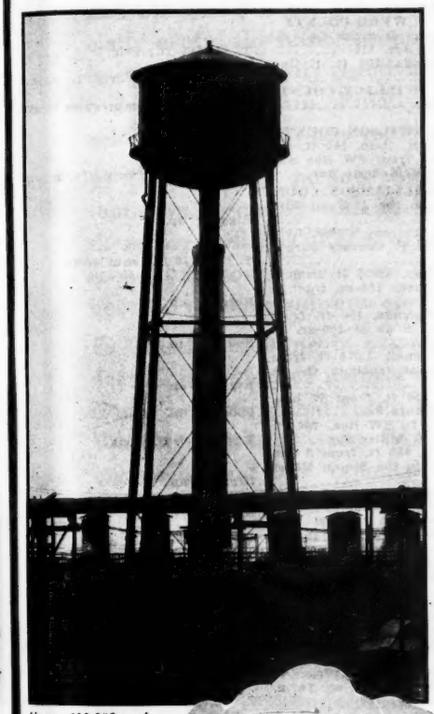
Adams & Lyles' No. 1 Denman, 838 ft. W line, 1,000 ft. N line of G. Denman 491-ac. tract in the William Havington Sur. .....T. D. 2,450 ft.; coring for chalk

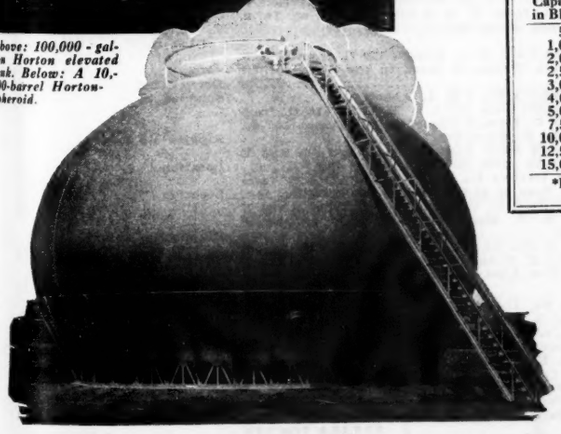
Below: Group of Horton tanks at Houston, Texas. Right: A 55,000-barrel tank equipped with Wiggins Floating Roof.



"...Tanks and Towers and... Condenser Boxes and... Spheroids and Roofs..."

(*with appropriate apologies*)





Above: 100,000-gallon Horton elevated tank. Below: A 10,000-barrel Horton spheroid.

FOR one oil company alone we have furnished the following range of products:

Wiggins Floating Roofs	Tanks (field storage)
Wiggins Breather Roofs	Tanks (asphalt storage)
Hortonspheres (for gas)	Tanks (acid oil)
Elevated Water Tanks	Tanks (fuel oil)
Elevated Caustic Melting Tanks	Tanks (cylindrical)
	Tanks (settling)
Smokestacks	Condenser Boxes
Blowdown Drums	Bubble Towers
Steel Barges	Water Separators

Leading companies in all departments of the oil industry buy many of these products regularly from us. This wide range in our line means that you can get all your platework from one source with resulting saving in time and money. Extensive fabricating facilities permit us to ship from Chicago, Ill.; Greenville, Pa.; Birmingham, Ala., or Bridgeburg, Ont.

Horton field-erected tanks are built in all capacities from 500 bbls. up—to our standard designs, A. P. I. specifications, or to customers' special designs. We have our own erection crews. These tanks may be equipped with cone roofs or with Wiggins Roofs for stopping evaporation and fire loss. Cylindrical tanks are shipped from Birmingham, Alabama, and Bridgeburg, Ontario. Elevated tanks supply dependable water service to refineries, oil field towns, pipe line stations, etc.

Our nearest office will be glad to supply complete information and estimates on any work you may have in mind.

STANDARD CAPACITY HORTON STORAGE TANKS

Capacity in Bbls.*	Diam.	Ht.	Capacity in Bbls.*	Diam.	Ht.
500	17'-6¼"	11'-9"	20,000	70'-2"	29'-0¼"
1,000	20'-3"	17'-6"	25,000	78'-9"	29'-0¼"
2,000	25'-0"	23'-3½"	31,200	87'-8¾"	29'-0¼"
2,500	27'-9"	23'-3½"	35,000	93'-7"	29'-0¼"
3,000	30'-6"	23'-3½"	37,500	96'-6"	29'-0¼"
4,000	31'-6"	29'-0½"	40,000	99'-5½"	29'-1"
5,000	35'-3"	29'-0½"	45,000	105'-3½"	29'-1"
7,500	43'-0"	29'-0½"	50,000	111'-1¾"	29'-1"
10,000	49'-8½"	29'-0½"	55,000	117'-0"	29'-1"
12,500	55'-9"	29'-0¾"	80,000	117'-0"	41'-10⅜"
15,000	61'-0"	29'-0¾"	100,000	134'-8¾"	40'-7"

*Barrels of 42 U. S. Gallons.

CHICAGO BRIDGE & IRON WORKS

Dallas	3341 Magnolia Bldg.	New York	3147 Hudson Terminal Bldg.
Birmingham	1536 Fiftieth St., N.	Philadelphia	1615 Jefferson Bldg.
Atlanta	2154 Rhodes-Haverty Bldg.	Boston	1517 Consol. Gas Bldg.
Chicago	2128 Old Colony Bldg.	San Francisco	1054 Rialto Bldg.
Detroit	1514 Lafayette Bldg.	Houston	1119 Electric Bldg.
Cleveland	2204 Union Trust Bldg.	Havana, Cuba	Apartado 2507

Oil Storage Tanks • • • Wiggins Roofs • • • Hortonspheres • • • Rundown Tanks • • • Cylindrical Tanks • • • Elevated Tanks • • • Standpipes • • • Pressure Tanks • • • Agitators • • • Absorbers • • • Bubble Towers • • • Condenser Boxes • • • Crude Stills • • • Refinery Equipment • • • Tank Cars • • • Smokestacks • • • Gas Holders • • •

OGJ 7-17-Gray

Cranfill & Reynolds' No. 1 McIntire, 150 ft. to E line, 150 ft. to S line of 100-ac. tract in the A. Gibson Sur., 6 miles SE from Seguin ..... Location.
Grayburg Oil Co.'s No. 2 Wells, 5,730 ft. E line, 2,490 ft. S line of NE cor. of Wells tract in the James D. Baume Sur., 6 miles SW from Darst Creek ..... Waiting on drilling rig.
Cranfill & Reynolds' No. 1 Wilson, 150 ft. S line, 1,200 ft. to W line 92-ac. tract in the Jesus Canter Sur., 8 miles SE from Seguin ..... Location corrected.
Brown Hinds et al's No. 1 George Altiger, 1,300 ft. from SE line, 1,100 ft. from SW line, of 120-ac. tract in A. Mansola Sur. ..... T. D. 1,975 ft.; shut down in Del Rio.
Louis Neis et al's No. 1 Voges, 517 ft. to S line, 150 ft. to E line of 150-ac. tract, 150 ft. E line and halfway to N and S line of Joseta Leal Sur. ..... T. D. 425 ft.; drlg. in chalk.
B. L. Rayburn's No. 1 B. Blumberg, 1,120 ft. NW line, 3,000 ft. NE line of Moses Baker Sur. ..... T. D. 425 ft.; drlg. in shale.
Penn Oil Co.'s No. 1 State Land, 1,300 ft. W line J. C. Darst Sur., 1,300 ft. NE line R. Moss 50-ac., near SE cor. J. K. Davis Sur., 2½ miles SW from Darst Creek ..... T. D. 2,670 ft.; taking core.

JACKSON COUNTY

The Texas Company's No. 1 Mitchell, 1,750 ft. E. 880 ft. N of SW cor. Ewing Sur. ..... T. D. 3,440 ft.; drlg. in gumbo.

JIM WELLS COUNTY

J. Walsh et al's No. 1 W. D. Wade, 1,035 ft. NE line, 300 ft. NW line of N cor., Lot 1, Blk. C, W. H. Bode Subd. ..... T. D. 210 ft.; set 10-in. surface csg.; W.O.C.

KARNES COUNTY

H. M. Lightfoot et al's No. 1 Barnett in the Alex Hunter Sur., 6 miles N of Karnes City ..... T. D. 2,916 ft.; preparing to deepen from abandoned depth, was carried as J. G. Fisher et al
J. F. Morrisey et al's No. 1 Ragsdale, 660 ft. SW of C of NE line of 170-ac. farm in the McCoull Sur. .... T. D. 1,850 ft.; shut down.
Dr. Hewitt's No. 1 W. E. Porter, 650 ft. from N line, 700 ft. from W line of 416-ac. tract in the Victor Blanco Sur., 8 miles SE from Runge ..... T. D. 2,700 ft.; drlg. in shale.
Moody-Seagraves' No. 1 W. W. Boyce, 2,110 ft. from E line, 487 ft. from S line in the W. W. Boyce Sur. .... T. D. 4,120 ft.; drlg. in sandy shale.
Mundine Investment Co.'s No. 1 A. D. Wilburn, C of 143 ac. in H. K. Hardy Sur., 3 miles SE from Dunge ..... T. D. 2,940 ft.; drlg. in sandy shale.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 940 ft.; shut down.
A. S. Mowinkle's No. 1 Kaston, 150 ft. from N line, 150 ft. from E line of tract, Sur. No. 724, 9 miles due W of Kendalia ..... T. D. 544 ft.; reaming hole in shale.
Sitten et al's No. 1 Garvin, C of NE of D. L. Richardson Sur. in the D. L. Richardson Sur., 1 mile NE from Kendalia ..... T. D. 550 ft.; shut down.
Dickinson et al's No. 1 Edmondson, 150 ft. from S line, 350 ft. from W line of tract in the J. O. Blair No. 72 Sur., 1 mile NW from Kendalia ..... T. D. 40 ft.; spudded in and shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale ..... T. D. 1,755 ft.; hard lime; shut down.
P. B. Sterling's No. 1 McCracklin, 1,350 ft. from N line, 250 ft from W line of the B. G. Owens Sur., 4 miles W from Kendalia ..... T. D. 400 ft.; drlg. in shale.
C. R. Dutton's No. 1 J. Lawhon, Sec. 10, 2,475 ft. E line, 1,488 ft. S line ..... Location.

KERR COUNTY

Evans et al's No. 1 Love Ranch, 100 ft. from S line Sur. 1,597, 1,000 ft. E of W line of J. Martinez No. 1,594 Sur. ..... T. D. 520 ft.; drlg. lime rock.

KLEBERG COUNTY

Bowen & Sarles' No. 1 Robert, H. Simmons in the A. Houston Sur. No. 611, Sec. 7, King Subd., 150 ft. out of NW cor. of SW ..... T. D. 1,580 ft.; shut down; W.O.C.

KINNEY COUNTY

Magnolia Petroleum Co.'s No. 1, SE cor. of Blads Sur., near S.P.R.R., close to Blume test on Wardlow ranch, W part of county, 2½ miles from Blume .... T. D. 2,450 ft.; drlg. in hard lime.
A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur. in the Poindexter-Burns Sur. ..... T. D. 275 ft.; shut down.

KIMBLE COUNTY

Lindley Bros.' No. 1 Anderson, Sec. 178, Mubenger Sur... T. D. 990 ft.; shut down.
C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 685 ft.; shut down.

LIVE OAK COUNTY

O. Stalley et al's No. 1 Nichols, 2,000 ft. from W line, 500 ft. from S line in the Ayers Sur. ..... Location.
Dougherty et al's No. 1 Jim Dougherty, 2,254 ft. SE of NW line, 750 ft. NE of SW line of M. Boren Sur. ..... T. D. 3,860 ft.; shut down.

McMULLEN COUNTY

E. H. Coquot's No. 1 Fahler, 2,300 ft. to N line, 300 ft. E line of 1,000-ac. tract in G. Pettuk Sur. ..... Spudded in and shut down.
Mazul Pet. Co.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... Preparing to set surface csg.

MAVERICK COUNTY

Rycade Oil Corp.'s No. 6 Chittim, 1,445 ft. from S, 320 ft. from W of Sec. 116, Blk. 7, I.&G.N. Sur. ..... T. D. 2,800 ft.; shut down.
Rycade Oil Corp.'s No. 5 Chittim, 600 ft. W of No. 3 Chittim, 500 ft. E line, 225 ft. from S line of SE Sec. 115, Blk. 7, in the I.&G.N. Sur. ..... T. D. 4,150 ft.; setting 5 3-16-in. csg.
Rycade Oil Corp.'s No. 5 Sullivan, in C of Sec. 82, Blk. 7, in the I.&G.N. Sur. ..... T. D. 6,535 ft.; drlg. in shale.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts, in George C. Hanson Sur. ..... T. D. 1,860 ft.; tested sulphur water; drlg. deeper.
Lynko Oil & Gas Corp.'s No. 1 Irrigated Farms, 160 ft. from E line, 500 ft. from S line of 36-ac. tract, Lot 50, Blk. 2, in the S. A. Trust Sur. ..... Dropped until operations start.
Kirby Pet. Co.'s No. 1 J. M. Fusselman, Sec. 208, 150 ft. from S and E lines in the S. Castro Sur. ..... T. D. 1,950 ft.; dry and abandoned.
Pearson Oil Co.'s No. 6 Medina Valley Inv. Co., 2,500 ft. S and E line of lease of Isom Palmer Sur. ..... T. D. 720 ft.; drlg. in shale.
Pan American Pet. Co.'s No. 1 Antoine Hart, in Harrison Sur. No. 799, 15 miles S from Hondo ..... T. D. 1,250 ft.; drlg. deeper after test; 2-bbl. well.
National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... T. D. 1,150 ft.; drlg. in sticky shale.
Sun Oil Co.'s No. 1 Edgar, 450 ft. from E line, 150 ft. from S line of 320-ac. tract in the J. Buell No. 362, 3 miles N from Noonan ..... T. D. 820 ft.; drlg. in Anacacho.
Sunflower Oil Co.'s No. 1 M. Modfield, 3,340 ft. from E line, 1,335 ft. S line of 640-ac. tract, Sur. 632, 10 miles S from Hondo ..... T. D. 963 ft.; comp.; pumping 5 bbls. oil, 30 bbls. water.
Donaldson Oil & Dev. Co.'s No. 2 Hillenmeyer, James Hillenmeyer No. 25 Sur., 500 ft. to E line of Sur., 150 ft. to S line of N half of Sur. ..... T. D. 200 ft.; shut down.
Pat Armstrong's No 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of Sur., 478.6 miles W from Devine ..... T. D. 400 ft.; shut down.

NUECES COUNTY

R. A. Thompson, trustee, et al's No. 1 Lawrence Harrell, 300 ft. N of S line and equal distance from E and W lines of Blk. 19, Sheppard farm lots subd., 4 miles W of Corpus Christi ..... T. D. 1,735 ft.; blew out; hole lost.

SAN PATRICIO COUNTY

George B. Pickett's No. 1 Baldwin, 9,900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neil Sur., Abstract 211 ..... T. D. 3,158 ft.; drlg. in sandy shale.
Cosden Oil Co.'s No. 1 Schmolsteig, C of SE Sec. 9, H. Powell Subd. in the B. Blanchard Sur. ..... Location.
LaFeria Oil & Gas Co.'s No. 1 C. C. Smith, in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 3,050 ft.; shut down in sandy shale.

STARR COUNTY

I. V. Maclean's No. 1, Tract No 5, 1,063-ac., Porcion 81, Juan Jose de la Garza in the Falcon grant ..... T. D. 150 ft.; drlg.
Kush Explin. Co.'s No. 1 ..... T. D. 100 ft.; drlg.
J. L. Smith's No. 1 Welch, Perdernal Sur. ..... T. D. 900 ft.; drlg.

UVALDE COUNTY

Ed Anglin et al's No. 1 U.P.P., 1,500 ft. from NW line, 7,450 ft. to NE line of Manual Leal Sur., 10 miles SE from Uvalde ..... Spudded in.
Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde ..... T. D. 1,616 ft.; drlg. in lime rock.
Waldrop & Welch's No. 1 E. R. Edmonds, 1,750 ft. NW, 7,200 ft. W of Sec. 71, in the A. Gomez Sur., 8 miles S of Uvalde ..... T. D. 1,160 ft.; shut down.
Phantom Oil Co.'s No. 1 Claudt, Sec. 611 ..... T. D. 2,250 ft.; reaming hole.

VICTORIA COUNTY

Attlee Drlg. Co.'s No. 1 M. West, 5,100 ft. to NE line, 1,050 ft. to NW line of 1,800-ac. tract in the P. DeWitt Sur. ..... T. D. 1,623 ft.; drlg. in shale and gumbo.
Lion Oil Ref. Corp.'s No. 2 McFadden, 1,917 ft. W of NE cor., 512 ft. at right angles from N line of the C. O. Edwards Sur., 660 ft. E of No. 1 in the M. J. Travesia Sur. ..... Spudded in.
The Texas Co.'s No. 1 A. M. McFadden, 1,550 ft. N and E lines of H. Bonny Sur. ..... T. D. 500 ft.; setting surface csg.

WEBB COUNTY

J. L. Elliot's No. 1 Esperonza Land & Stock Co., 950 ft. from N line, 2,231 ft. E line Sur. 815 ..... T. D. 865 ft.; drlg.
O. W. Killam's No. 8 W. C. Billings, 100 ft. E line, 3,788 ft. S line Sur. 1 ..... T. D. 2,468 ft.; drlg. in rock.

WILLACY COUNTY

Weimer-Richardson's No. 1 Elmore ..... T. D. 1,860 ft.; shut down in gumbo.

WILSON COUNTY

Transcontinental Oil Co.'s No. 1 J. H. Bain, 150 ft. out of E cor. of tract, 1,850 varas from SW line and 75 varas from SE line of Noel F. Roberts Sur. ..... T. D. 4,060 ft.; drlg. Taylor marl.

WILLIAMSON COUNTY

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 320 ft. N and 330 ft. E of Sur. ..... Rigging up.
Fred Beatty's No. 1 H. Bland, 450 ft. from N line, 1,000 ft. from E line of tract, in the P. Coursey Sur., 1 mile E from Taylor ..... T. D. 1,176 ft.; shut down.
Fred Beatty's No. 1 J. B. Pumphrey, 1,328 ft. from S and E lines of Mrs. J. B. Pumphrey 158-ac. tract in the W. Cartwright Sur. ..... Rigging up.
M. Bartlett et al's No. 1 R. E. Thomas, 450 ft. from N line, 170 ft. from E line of S 50 of 100-ac. of farm in the H. Owen Sur. ..... Spudded in.
E. L. Chapman's No. 2 J. H. McConnell, 1,070 ft. from W line, 150 ft. from N line of tract in the S. Miller Sur. ..... Rigging up.
Elliot et al's No. 1 S. W. Jones, 600 ft. from W line, 400 ft. from S line of Alvert Nants Sur. ..... Spudded in.
E. L. Chapman's No. 3 Fuchs, 150 ft. SW line, 750 ft. NW line of 93-ac. tract in the S. Miller Sur. ..... T. D. 1,000 ft.; drlg.
G. B. Peterman's No. 2 J. C. Abbott, 450 ft. from S and W line of Abbott 100-ac. tract, in the Simon Miller Sur., SE from Thrall ..... Rigging up.
Bridwell et al's No. 1 H. L. Martin, 1,150 ft. from N line, 150 ft. from W line of Simon Miller Sur. ..... Rigging up.
McNeil et al's No. 1 R. L. Abbott, 300 ft. NW line, 150 ft. NE line of Abbott 15-ac. tract, in the S. Miller Sur. ..... Spudded in.
Powell & Kykendall's No. 1 Christian Mager, in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres ..... Old well deepening.
E. L. Chapman's No. 1 Barney Lawrence, 330 ft. from SE and SW lines of farm, in the Simon Miller Sur... Rigging up.
E. L. Chapman's No. 1 J. F. McConnell, 150 ft. from S and W of 100-ac. farm in the Simon Miller Sur. .. T. D. 1,922 ft.; Serpentine; show of oil 1,900 ft.
E. R. Ertell's No. 1 J. F. McConnell, 295 ft. from N line, 180 ft. from W of S 50-ac. of 100-ac. farm, in the Simon Miller Sur. ..... T. D. 2,136 ft.; small oil show 1,100 ft.
Keeshan et al's No. 1 R. L. Abbott, 170 ft. from N line, 772 ft. from W line of farm, in the Simon Miller Sur. ..... Derrick up.
E. W. Marts et al's No. 1 R. L. Abbott ..... Spudded in.
Taylor Temple Oil Co.'s No. 1 F. M. Cain, 876 ft. from E line, 150 ft. from N line of C. D. Johnson 109-ac. tract in the S. Miller Sur. ..... Rigging up rotary.
J. A. Thompson's No. 1 T. H. Martin, 150 ft. N and E lines of 20-ac. tract in the S. Miller Sur. ..... Location.
Westheimer & Daube's No. 1 R. L. Abbott, 150 ft. from N and W lines of 57-ac. tract in the S. Miller Sur... Location.
R. R. Wilder's No. 1 H. T. Martin, 158 ft. from N and E lines of H. T. Martin 76.25-ac. tract in the S. Miller Sur. ..... Rigging up rotary.
L. W. Wilson et al's No. 1 W. L. Lawrence, 150 ft. from W line and C N and S of 35-ac. tract or 1,400 ft. from SW line, 1,450 ft. SW line of H. Owens Sur. ... Spudded in.

ZAPATA COUNTY

B. F. Nixon's No. 1 A. Gutierrez, 170 ft. S line, 332 ft. E line, Lot 5, Blk. 8, Partition 10, Borrego grant .... T. D. 50 ft.; standing.
Penny Prod. Co.'s o. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 101 ft.; drlg.
Penny Prod. Co.'s No. 1 Trevino, 300 ft. SE line, 200 ft. NE line Marts & Beavers Subd. of Por. 2 and 3, Blk. 6, Sur. 4 ..... T. D. 655 ft.; drlg.
National Oil Co.'s No. 1 D. B. Adams ..... T. D. 1,200 ft.; standing.

ZAVALA COUNTY

Krebs & Davis' No. 1 Weatheresby, E center of NW of Sec. 44, Blk. A, Adams, Beaty & Mouton Sur., 4 mi. E from Loma Vista ..... T. D. 1,550 ft.; shut down in shale.
Texas Gas Utilities Co.'s No. 6 A. M. West, C of Sur. in the M. Suniga Sur. No. 44 ..... Location.
Weigand Bros.' No. 1 W. L. Gates, Hooper & Wade Sur. No. 13, 1,320 ft. S of N line, 1,320 ft. W of NE cor. Sur., about 18 miles S of Bateville ..... T. D. 2,200 ft. (corrected depth) shut down.
Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34 ..... T. D. 2,260 ft.; drlg. in shale.
Texas Fuel & Gas Co.'s No. 5 West, 150 ft. from SE line, 4,700 ft. from SW of Marguett Singer Sur., 20 miles SW from Batesville ..... T. D. 1,500 ft.; shut down.
F. Baldwin's No. 1 Washer, 300 ft. S and E of Sec. 34, in the W. E. Erskin Sur. ..... T. D. 2,185 ft.; drlg. in hard shale.

DESULPHURIZATION

OF NATURAL AND REFINERY GASES

WITH TRIETHANOLAMINE

◐ The absorption of acid gases (such as hydrogen sulphide) by basic compounds is a well-known and obvious process. In general, to be commercially useful the basic compound chosen must be inexpensive or easily reactivated so it can be used over and over again. Finally, it must remove the acid gas completely at a reasonable cost.

◐ Until recently no substance has been available that would comply with these requirements and therefore millions of feet of natural and refinery gases that would otherwise be useful are wasted because of their sulphur content.

◐ Triethanolamine is admirably suited for the desulphurization of natural and refinery gases as would be anticipated from its known properties. When pure it is a viscous liquid of very high boiling point and low vapor pressure — properties essential to a good absorbent liquid. It is best used in water solution, the concentrations depending upon the sulphur content of the gas.

◐ The operation is very simple and no expensive equipment is required. The gas is passed through any convenient system of scrubbing towers containing the Triethanolamine solution. The solution, after stripping out the sulphur compounds, is passed to reactivators where the absorbed H_2S is easily driven off by heat. If the gas being treated is available under pressure, absorption can best be performed under pressure, under which condition the Triethanolamine can be reactivated by circulation into a blow-off case where a release of pressure also releases the H_2S.

◐ If local conditions render the release of H_2S in this manner inadvisable, reactivation can be achieved simply by blowing air through the Triethanolamine solution. Under these conditions the sulphide compounds are decomposed resulting in the formation of elemental sulphur as a by-product that can be recovered and used.

◐ Triethanolamine works equally well as an absorbent for other acid gases such as CO_2, Cl, HCl and SO_2.

◐ Complete information concerning the use of Triethanolamine as an absorbent is available in our new booklet entitled "Triethanolamine—An Absorbent for Acid Gases," which is free for the asking. Please use the coupon below.

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GULF COAST FIELDS AND WILDCATS

(Continued from Page 48)

Yount Lee Oil Co.'s No. 5 Richardson, southwest ..... Drlg. salt 5,002 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 5 Bellville ..... Drlg. shale and shell 2,920 ft.
Humble & Valley's No. 1 Brown ..... Temporarily abandoned 3,700 ft.
Humble & Valley's No. 3 Buchanan ..... Derrick.
Humble & Valley's No. 1-B Hardy (Waller County) ..... Abandoned 3,751 ft.
Humble & Valley's No. 2-B Hardy ..... Spudded.
Humble & Valley's No. 7 Payne ..... Derrick.
Humble & Valley's No. 8 Payne ..... Derrick.
Hum. le & Valley's No. 3 Sherrod ..... Drlg. shale and lime 1,053 ft.
Humble & Valley's No. 7 Urban ..... Shut down 1,165 ft.
Humble & Valley's No. 6 Woodley ..... Derrick.
Humble & Valley's No. 7 Woodley ..... Derrick.
Humble & Valley's No. 8 Woodley ..... Derrick.
Humble & Valley's No. 9 Woodley ..... Derrick.

DEWALT—FORT BEND COUNTY

Humble Oil & Ref. Co.'s No. 15 Brazos ..... Drlg. sandy shale 3,548 ft.
Humble Oil & Ref. Co.'s No. 6 Camp ..... Rig.

HUMBLE—HARRIS COUNTY

Benedum & Trees' No. 1 Foley, south ..... Abandoned 8,181 ft.
Freeport Sulphur Co.'s No. 1 Bender, northeast ..... Drlg. 356 ft.
Freeport Sulphur Co.'s No. 2 Bender, northeast ..... Location.
Freeport Sulphur Co.'s No. 1 McDonald ..... Cap rock showing oil 1,106-08 ft.
Houtex Oil Co.'s No. 1 Hirsch, northwest ..... No report.
LaRue, trustee's No. 1 Crane, northwest ..... Location.
Rio Bravo Oil Co.'s No. 1 fee, west ..... Comp. flowing 350 bbls. oil 3,754 ft.
Rio Bravo Oil Co.'s No. 2 fee, west ..... Comp. flowing 1,800 bbls. oil on ½-inch choke 3,958-87 ft.
Rio Bravo Oil Co.'s No. 3 Fee, west ..... Rig.
Rio Bravo Oil Co.'s No. 1 H.&W.T., west ..... Rig.
South Drlg. & Prod. Co.'s No. 1 Lipper, northwest ..... Location.
South Texas Pet. Co.'s No. 4 Lee, south ..... Comp. flowing 800 bbls. 4,824 ft.
South Texas Pet. Co.'s No. 15 Morris, south ..... Drlg. gumbo 2,417 ft.
Sun Oil Co.'s No. 9 Bender, west ..... Location.
Sun Oil Co.'s No. 7 Bender, west ..... Sets 2 jts. screen 4,353 ft.; comp. flowing 2,100 bbls.
Sun Oil Co.'s No. 8 Bender, west ..... No report.
Sun Oil Co.'s No. 10 Bender, west ..... Location.
Sun Oil Co.'s No. 11 Bender, west ..... Location.
Sun Oil Co.'s No. 48 River, north ..... No report.
Sun Oil Co.'s No. 49 River, north ..... Location.
Trap Shooter Riley's No. 1 Long John Jones ..... Rig.
The Texas Company's No. 1 Fee ..... Location.
The Texas Company's No. 23 Wheeler and Pickens, northeast ..... Drlg. gumbo and boulders 2,164 ft.
West Prod. Co.'s No. 3 Foster, north ..... Location.

BLUE RIDGE—FORT BEND COUNTY

Joe Collins' No. 1 R. C. Duff ..... Drlg. sandy shale 4,660 ft.
Gulf Production Co.'s No. 18 Luscher, south ..... Rig.
Navarro Oil Co.'s No. 9-A Robinson, west ..... Drlg. shale 4,729 ft.

PIERCE JUNCTION—HARRIS COUNTY

Navarro Oil Co. and Texas Exploration Co.'s No. 19 Dooley, east ..... Fishing.
Rio Bravo Oil Co.'s No. 12-A Settegast (workover) ..... Drlg. sand 5,404 ft.
Rio Bravo Oil Co.'s No. 19-A Settegast ..... Drlg. hard sandy lime 1,360 ft.

LIBERTY—LIBERTY COUNTY

Superior Oil Corp.'s No. 2 Boyles ..... Comp. flowing 1,100 bbls. 3,870 ft., 35 ft. screen set.
The Texas Company's No. 7 Green, northwest ..... Water sand 3,757 ft.

HULL—LIBERTY COUNTY

The Texas Company's No. 2 Barrow ..... Swabbing oil and salt water 3,993 ft. showing gas.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 59 Davis ..... Location.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 11 Mayes ..... Total depth 2,702 ft.; sidetracking in gumbo 2,675 ft.
Pure Oil Co.'s No. 11-A Mayes ..... Location.
Pure Oil Co.'s No. 5 Lost Lake ..... Spudded.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 27 Wisdom ..... Drlg. sand, gravel and boulders 525 ft.

SOUR LAKE—HARDIN COUNTY

The Texas Company's No. 306 Texas Co. fee ..... Drlg. gumbo. 1,407 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 85-A Cotton ..... Comp. pumping 22 bbls. oil 577 ft.
Rio Bravo Oil Co.'s No. 87-A Cotton ..... Drlg. sand and shale 191 ft.

GOOSE CREEK—HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 78 Simms-Smith ..... Drlg. gumbo 1,315 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 5 Fee (workover) ..... Drlg. sand 3,410 ft.
Yount Lee Oil Co.'s No. 8 McFaddin (workover) ..... Comp. flowing 600 bbls. oil 2,600 ft.
Yount Lee Oil Co.'s No. 122 McFaddin ..... Total depth 5,794 ft.; sidetracking 4,947 ft.
Yount Lee Oil Co.'s No. 127 McFaddin ..... Drlg. sand and shale 4,538 ft.
Yount Lee Oil Co.'s No. 138 McFaddin ..... Drlg. 4,602 ft.
Yount Lee Oil Co.'s No. 139 McFaddin ..... Drlg. shale and lime 2,300 ft.
Yount Lee Oil Co.'s No. 140 McFaddin ..... Drlg. 2,122 ft.
Yount Lee Oil Co.'s No. 33 Gladys City ..... Abandoned 3,881 ft.

NORTH DAYTON—LIBERTY COUNTY

Victor Oil Co.'s (V. H. Borsodi) No. 2 Gulf ..... Drlg. shale 4,750 ft.
Houston Oil Co.'s No. 1 Davis, north ..... Location.
Houtex Oil Co.'s No. 2 Wilhite ..... Drlg. sand and shale showing oil 4,942 ft.
Harrison Oil Co.'s No. 5 Quintette ..... Location.
The Texas Company's No. 1 Paraffine fee ..... Abandoned 5,557 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 10 Smith ..... Reaming 3,821 ft.
Marrs McLean's No. 18 Cade ..... Drlg. hard sand and lime 3,980 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 23 Moore ..... Drlg. shale and lime 2,720 ft.
Gulf Production Co.'s No. 24 Moore ..... Drlg. hard sand and lime 2,694 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Oil Co.'s No. 5 Esperson ..... Tested salt water 5,405-35 ft.; temporarily abandoned.
Cranfill-Reynolds Oil Co.'s No. 13 Esperson ..... Comp. flowing 600 bbls. oil 3,288 ft.
Cranfill-Reynolds Oil Co.'s No. 14 Esperson ..... Spudded.
Cranfill-Reynolds Oil Co.'s No. 4 Davis ..... To pump 2,347 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Vajdak (workover) ... Set 410 ft. screen 7,386 ft.; flowed mud and wash water; shut down.
Cranfill-Reynolds Oil Co.'s No. 3 Moores Bluff ..... Drlg. gumbo 1,751 ft.
Cranfill-Reynolds Oil Co.'s No. 1-B Moores Bluff ..... Drlg. gumbo 2,102 ft.
Republic Production Co.'s No. 1 Moores Bluff ..... Drlg. shale and lime 5,090 ft.
Yount Lee Oil Co.'s No. 3 Moores Bluff ..... Drlg. shale 7,020 ft.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 7 Boyt ..... Drlg. shale 3,661 ft.
Gulf Production Co.'s No. 8 Boyt ..... Drlg. gumbo 2,901 ft.
Gulf Production Co.'s No. 1 Ezzell ..... Drlg. 1,721 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Anderson et al's No. 1 Smith & Brooks ..... Drlg. rock 1,789 ft.

MARKHAM—MATAGORDA COUNTY

Kamil Drilling Co.'s No. 1 Meyers ..... Set 3 jts. screen 2,350 ft.; comp. flowing 150 bbls. net oil, 20% water, gravity 25.5°.

BOLING—WHARTON COUNTY

C. S. Thomas' No. 1 Volney ..... Drlg. gumbo 178 ft.
C. S. Thomas' No. 1 Taylor ..... Drlg. gumbo 725 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 1 O'Brien, Block 5 ..... Set 15 jts. screen 5,427 ft.; comp. flowing 700 bbls.
Houston Oil Co.'s No. 3 Ryals ..... Drlg. gumbo 1,223 ft.
Houston Oil Co.'s No. 1 Rooke ..... Derrick.
Houston Oil Co.'s No. 1 Strauch, Block 20 ..... Blowing wild; sand 5,468 ft.
Houston Oil Co.'s No. 1 City, Block 59 ..... Shut down 1,421 ft. because of No. 1 Strauch wild well.
Houston Oil Co.'s No. 1 O'Connor ..... Changing rigs 512 ft.
Houston Oil Co.'s No. 1 West ..... Drlg. gumbo 5,309 ft.
Houston Oil Co.'s No. 1 Rose Lambert ..... Drlg. plug 5,892-5,901 ft.
Houston Oil Co.'s No. 2 Rose Lambert ..... Drlg. shale and lime 4,551 ft.
Houston Oil Co.'s No. 1-A Fannie Heard ..... Total depth 5,370 ft.; set 21 ft. screen.
Houston Oil Co.'s No. 13 P. H. Rooke ..... Comp. flowing 150 bbls. 3,703-10 ft.
Houston Oil Co.'s No. 7 Fannie Heard (workover) ..... Oil sand 3,680-85 ft.; cem. casing.
Houston Oil Co.'s No. 1 Johnson, Block 63 ..... Shut down 1,157 ft. because of No. 1 Strauch wild well.
Independent Oil Co.'s No. 1-B J. F. B. Heard (workover) .. Oil sand 3,650-55 ft.; drlg. plug.
Independent Oil & Gas Co.'s No. 2-C J. F. B. Heard ..... Comp. flowing 50 bbls. 3,690 ft.
Independent Oil & Gas Co.'s No. 1 Mitchell ..... Derrick.
Independent Oil Co.'s No. 1 Mercy Academy ..... Comp. flowing 25 bbls. oil 5,382 ft.
Independent Oil & Gas Co.'s No. 1 Shelly (workover) ... Oil sand 6,335-6,446 ft.; set 5 3/16-inch csg.
Independent Oil & Gas Co.'s No. 6 Jerry Reilly (workover) ..... Drlg. shale 5,398 ft.
Edwin M. Jones' No. 3-A J. F. B. Heard ..... Tested salt water 3,676 ft.; plugged bottom of hole.
Edwin M. Jones' No. 4-A J. F. B. Heard ..... Tested salt water 3,661 ft.
Larco Co.'s No. 5 Strauch ..... Cemented csg. 3,658 ft.
Luling Oil & Gas Co.'s No. 1 J. W. Kay ..... Rebuilding derrick 3,758 ft.
Luling Oil & Gas Co.'s No. 1 West ..... Rig up to deepen.
Mission Drilling Co.'s No. 1 Holmes Heard ..... Set 15 ft. screen; swabbing 3,700 ft.
Mission Drilling Co.'s No. 1 Joe Shay, Block 6 ..... Drlg. hard sand 5,083 ft.
Moody-Seagraves Prod. Co.'s No. 2 O'Brien ..... Killed blowout 5,691 ft.
Moody-Seagraves Prod. Co.'s No. 1-A O'Brien ..... Derrick.
Moody-Seagraves Prod. Co.'s No. 3 O'Brien ..... Derrick.
Moody-Seagraves Prod. Co.'s No. 9 O'Brien ..... Drlg. sand rock 571 ft.
Moody-Seagraves Prod. Co.'s No. 1 Strauch, Block 64 .... Drlg. gumbo 4,096 ft.
Morgan Oil Corp.'s No. 2 O'Connor ..... Set 15 joints screen 5,389 ft.; swabbing.
Morgan Oil Corp.'s No. 4 O'Connor ..... Set 10 ft. screen 5,456 ft.; comp. flowing 500 bbls.
Pearson Properties, Inc.'s No. 1 Hornburg ..... Rig.
Pearson Properties, Inc.'s No. 2 Ryals ..... Comp. spraying 55 bbls. 5,706-18 ft.
Pearson Properties, Inc.'s No. 1 Tobe Wood ..... Drlg. hard sand and lime 4,760 ft.
Ed Price's No. 1 Mission River ..... Tested salt water 3,663 ft.; plugging back.
Saxet Oil Co.'s No. 12 Clint Heard ..... Oil and gas sand 3,620-84 ft.; coring.
Saxet Oil Co.'s No. 1 Kay ..... Drlg. rock 640 ft.
L. L. Smith's No. 1 Sumner ..... Drlg. shale and boulders 872 ft.
Sun Oil Co.'s No. 5 Buckley ..... Set 23 ft. screen 3,699-3,704 ft.
The Texas Company's No. 2 Ben Shelton ..... Cemented 10-in. csg. 1,420 ft.
Union Producing Co.'s No. 5 O'Brien ..... Drlg. hard sandy lime and shale 5,270 ft.
Union Producing Co.'s No. 6 O'Brien ..... Derrick.
Union Producing Co.'s No. 4 Powers ..... Cemented csg. 5,706 ft.
Union Producing Co.'s No. 5 Powers ..... Location.
Union Producing Co.'s No. 5 Mitchell ..... Rig.
Union Producing Co.'s No. 2 Eskridge-Heard ..... Rig.
Union Producing Co.'s No. 3 J. F. B. Heard ..... Comp. flowing 78 bbls. 3,657 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Moss ..... Drlg. sand 4,331 ft.
Union Sulphur Co.'s No. 1 Martha Moss ..... Drlg. gumbo 1,800 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 28 Miller ..... Cemented 13⅜-in. csg. 1,263 ft.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 29 Miller ..... Building bridge to location.
Vacuum Oil Co. and Gulf Ref. Co.'s No. 5 Freiberg & Wolf ..... Drlg. water sand 4,758 ft.
Vacuum Oil Co. and Gulf Prod. Co.'s No. 7 Farquahar .. Drlg. sandy shale 4,279 ft.
Vacuum Oil Co.'s No. 6 Bayou State ..... Building derrick.
Yount Lee Oil Co.'s No. 1 Miller ..... Drlg. water sand 3,376 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 19 Watkins ..... No report.
Calcasieu Oil Co.'s No. 1 Isaac Dorisu ..... Rig.
Dubon Oil & Mineral Co.'s N. 1 Koonce ..... No report.
Gulf Refining Co.'s No. 1 Erwin ..... Drlg. 3,327 ft.
The Texas Company's No. 7 State ..... Rigging up.
Yount Lee Oil Co.'s No. 1 Portia ..... No report.
Yount Lee Oil Co.'s No. 3 R. Vincent ..... No report.

JENNINGS—ACADIA PARISH

Abshire-Bolyard's No. 6 Jennings ..... Location.
The Texas Company's No. 5 Rayne heirs, King tract ... Drlg. rock 8,456 ft.
Yount Lee Oil Co.'s No. 9 Housiene Latville ..... Location.
Yount Lee Oil Co.'s No. 7 Crowley ..... No report.

VINTON—CALCASIEU PARISH

Emerson-Moore's No. 1 Gray estate ..... Location.
Gulf Refining Co.'s No. 2 Gardner ..... Total depth 3,780 ft.; sidetracking 2,612 ft.
Gulf Refining Co.'s No. 3 Gardner ..... Drlg. 2,822 ft.
Vinton Petroleum Co.'s No. 7 Gray ..... Comp. flowing 3,500 bbls. 2,899 ft.
Vinton Petroleum Co.'s No. 8 Gray ..... Rig.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 1 Woodyard Lake ..... Drlg. sandy shale and shell 4,240 ft.
Rycade Oil Corp.'s No. 10 Bouillon fee ..... Drlg. hard shale 4,173 ft.

STARKS—CALCASIEU PARISH

Adams Oil Co.'s No. 1 Roderick ..... No report.
J. O. Davis' No. 1 Industrial ..... Standing 3,775 ft.
Gulf Refining Co.'s No. 23 Lutcher-Moore ..... Comp. flowing 125 bbls. oil 1,100 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Petroleum Co.'s No. 1 Sweet Lake ..... Drlg. 1,805 ft.
Pure Oil Co.'s No. 9 Yount Lee ..... Drlg. sand, shale and lime 6,645 ft.

ANSA LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 2 Herbert ..... Drlg. 4,812 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Refining Co.'s No. 3 Hoskins ..... Oil sand 3,335 ft.
Alex Rice, trustee's No. 1 Futral ..... Pulling screen 4,497 ft.
Pure Oil Co.'s No. 1 Perkins ..... Waiting cement to set 1,104 ft.
The Texas Company's No. 8 Botany Bay ..... Oil sand 3,340 ft.; cemented 9⅝-in. csg. 3,312 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Black Oil Co.'s No. 1 Lancashire, near Sealey ..... Fishing drill stem 4,247 ft.
O'Hara et al's No. 1 Batla, near Raccoon City ..... Shut down 4,000 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. .... Drill stem test showed salt water 5,500-30 ft.; drlg. sand, shale and lime 5,650 ft.
Mills Bennett Production Co.'s No. 1 Random, Allen ... Total depth 5,365 ft.; sidetracking 4,928 ft.
Mills Bennett Production Co.'s No. 1 Reese, Allen ..... Drlg. sand and shale 1,199 ft.
Mills Bennett Prod. Co.'s No. 1 Poole, Allen ..... Derrick.
Cullen & West's No. 1 Ward, Damon Mound ..... Drlg. lime 3,440 ft.
Faust et al's No. 5 Faust ..... Drlg. shale and lime 4,251 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ... Drlg. gumbo 836 ft.
Layne et al's No. 6 Wisdom, Damon Mound ..... Swabbed dry 2,804 ft.; drlg. deeper.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Total depth 1,180 ft.; sidetracked to rock 968 ft.; shut down.
Rycade Oil Corp.'s No. 1 Rapid City, Henry Austin Sur... Reaming 5,709 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Shut down 1,567 ft.

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It is this tendency toward precaution in everybody which is responsible for the popularity of the Guiberson Tubing Catcher. The Guiberson Tubing Catcher, suspended at the foot of a string of tubing, in the event of an accident, will stop the falling tubing within three inches. Dove-tail tracks guide the slips instantly and accurately to the casing walls. Strong spring operates with or without fluid in the hole. Heavy striker weight overcomes the retarding action of mud or paraffin

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GUIBERSON

BETTER BE SAFE THAN SORRY

Shell Petroleum Corp.'s No. 3 Blakely-Winston, Danbury.. Drlg. sandy shale 1,482 ft.
Shell Petroleum Corp.'s No. 3 Proebste, Clemens ..... Cap rock, standing.
Steel & Strickland's No. 1 Lockridge ..... Spudded and shut down.
United Oil Syndicate's No. 1 Moores, Francis Moore Sur. ..... Washing to bottom 1,200 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Thomas, J. P. Tilley Sur..... Total depth 1,058 ft.; cemented csg. at 1,010 ft.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down 3,810 ft.
Shell Petroleum Corp.'s No. 1 Herff, Moss Bluff ..... Total depth 5,630 ft.; reaming 5,125 ft.
Pure Oil Co.'s No. 1 Kirby, Charles Tilton Survey ..... Drlg. gummy shale and lime 6,260 ft.
Pure Oil Co.'s No. 1 J.H.K. Ranch, Oyster Bayou ..... Fishing 3,977 ft.
Superior Oil Corp.'s No. 1 Jackson ..... Changing rigs 3,865 ft.
The Texas Company's No. 1 Jackson, T.&N.O. Sur., Sec. 17 ..... Drlg. sand, shale and shell 1,447 ft.

COLORADO COUNTY

Gulf, Humble and Penn's No. 1 Wilson, John McCroskey Sur. ..... Drlg. shale 3,775 ft.

GRIMES COUNTY

Cranfill-Reynolds Oil Co.'s No. 1 Stoneham, Navasota ... Reaming 2,456 ft.
Deering & Noble's No. 1 Templeman, 6 miles south Navasota ..... Drlg. gumbo 1,310 ft.

HARDIN COUNTY

D. O. Speights' No. 1 fee, near Batson ..... Drlg. gumbo 2,336 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Shut down 4,247 ft.
Cranfill-Reynolds Oil Co.'s No. 1 Rorick, J. Ogburn Sur... Abandoned 5,412 ft.
Humble Oil & Ref. Co.'s No. 7 Warren, Hockley ..... Drlg. shale 7,063 ft.
Humble Oil & Ref. Co.'s No. 3 Minnetex, Mykawa ..... Rig.
Sloan Prospecting Co.'s No. 1 Davis, Cedar Bay ..... Abandoned 6,404 ft.
Strang Oil Co.'s No. 1 Good, Deer Park ..... Standing 6,012 ft.

JASPER COUNTY

Helmerich & Payne, Inc.'s No. 1 C. L. Flourney ..... Location.

JACKSON COUNTY

Jackson County Oil Syndicate's No. 8 Drushell, Edna ... Drlg. shale 3,242 ft.
The Texas Company's No. 1 C. A. Mitchell, G. Ewing. Sur. ..... Fishing 5,235 ft.

JEFFERSON COUNTY

Deep Test Oil Co.'s No. 1 McFaddin, Chaisson Sur. ..... No report.
Gulf Production Co.'s No. 2-A Junker, Fannett ..... Sand and shale showing oil 4,190 ft.; cemented 6⅝-in. csg. at 4,129 ft.
The Texas Company's No. 3 Pipkin, Big Hill ..... Pulled 6⅝-in. csg. 1,553 ft.
Westbury Oil Co.'s No. 1 West, Choate Sur. ..... Shut down 3,205 ft.

LIBERTY COUNTY

Gulf Production Co.'s No. 1 McFaddin, Moss Bluff ..... Set 2 jts. screen and 8 jts. blank pipe 5,831 ft.; comp. flowing 1,000 bbls. daily.
Gulf Production Co.'s No. 2 McFaddin, Moss Bluff ..... Location.
Humble Oil & Ref. Co.'s No. 1 Sabine Tram, Devers .... Drlg. shale 5,491 ft.
Tucker et al's No. 1 Bell, Devers ..... Derrick.

MATAGORDA COUNTY

Cockburn et al's No. 1 Hawkins, Shepherds Mott ..... Abandoned in heaving shale 6,150 ft.
Watts Oil Co.'s No. 1 Titus, Wheelright Sur. ..... Shut down 3,500 ft.

MONTGOMERY COUNTY

Kelley-Kaker's No. 2 Guerges ..... Shut down 1,915 ft.

ORANGE COUNTY

Gulf Production Co.'s No. 1 W. E. Starks, Port Neches... Sand and shale showing oil 4,369-4,481 ft.
The Texas Company's No. 2 Kuhn, Port Neches ..... Cored sand showing oil 4,297-4,302 ft.
The Texas Company's No. 2 Stark, Port Neches ..... Drlg. sticky shale 4,468 ft.

VICTORIA COUNTY

The Texas Company's No. 1 McFaddin, H. Bonny Sur.... Drlg. gumbo 3,804 ft.
Lion Oil & Ref. Co.'s No. 2 McFadd n, M. Traviers Sur... Rig.
Newton et al's No. 1 West ..... Shut down 1,550 ft.

WALKER COUNTY

Texas State Oil Co.'s No. 2 Foils, H.&T.C. Sur., Abstract 287 ..... Shut down 1,802 ft.

WALLER COUNTY

Kirby Pet. Co.'s No. 2 Rogers, San Felipe ..... Cemented 15½-in. csg. 211 ft.
W. P. Morris' No. 1 Chapman, Donoho Sur. ..... Shut down 2,075 ft.

WASHINGTON COUNTY

W. Birdwell's No. 1 Schram, James Walker Sur. ..... Shut down 2,110 ft.
Clifton et al's No. 1 Pruiss, E. Alcorn Sur. ..... Drlg. shale 1,335 ft.
Sun Oil Co.'s No. 9 Grote, Clay Creek ..... Drlg. cap rock 3,130 ft.
Sun Oil Co.'s No. 4 Clay, Clay Creek ..... Drlg. sand rock 2,812 ft.
Sun Oil Co.'s No. 5 Hunt, Clay Creek ..... Rig.
Sun Oil Co.'s No. 5 Janner, Clay Creek ..... Rigging up to pump.

SOUTH LOUISIANA

ACADIA PARISH

Charles P. Siess' No. 1 Roller, Sec. 8-9s-1e ..... No report.

CALCASIEU PARISH

Wilfred Lahay's No. 2 James ..... Standing 3,970 ft.

CAMERON PARISH

Shell Petroleum Corp.'s No. 15 Watkins, Black Bayou ... Driving piling.
Shell Petroleum Corp.'s No. 1 State, Black Bayou ..... Rig.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w ..... Total depth 3,953 ft.; fishing drill stem.
The Texas Company's No. 6 State, Calcasieu Lake ..... Building derrick.

IBERIA PARISH

Lake Oil Co.'s No. 1 Ben White, Sec. 54-12s-7e ..... Drlg. 1,810 ft.
Jefferson Lake Oil Co.'s No. 7 Lake Peigneur, Jefferson Lake ..... Location.
Jefferson Lake Oil Co.'s No. 8 Lake Peigneur, Jefferson Lake ..... Location.
The Texas Company's No. 5 Vermillion Bay ..... Drlg. hard rock 3,450 ft.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 5 Wilbert, White Castle .... Rig.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Drlg. 2,202 ft.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue ..... Drlg. 2,850 ft.
Standard Oil Co.'s No. 7 Wilbert ..... Derrick.
Standard Oil Co.'s No. 8 Wilbert ..... Drlg. 902 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue ..... Driving piling.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue... Building derrick.
Standard Oil Co.'s No. 2 Case, Bayou Des Glaise ..... Location.

JEFFERSON PARISH

Humble Oil & Ref. Co.'s No. 1 Delaware, Sec. 2-16s-23e.. Reaming 1,900 ft.

JEFFERSON DAVIS PARISH

Shell Petroleum Corp.'s No. 1 Heyd, Iowa ..... Location.
M. L. Vincent's No. 1 Richards, Sec. 22-7s-3w ..... Abandoned 3,309 ft.

LAFAYETTE PARISH

Pure Oil Co.'s No. 1 Marmetin, Carenero ..... Drlg. hard lime 3,647 ft.

LA FOURCHE PARISH

The Texas Company's No. 1 Leesville ..... Drlg. hard sand 5,448 ft.

PLAQUEMINE PARISH

Humble Oil & Ref. Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Drlg. sandy shale 5,210 ft.
Humble Oil & Ref. Co.'s No. 2 Cockrell-Moran, Lake Grand Ecaille ..... Dredging canal to location.
Humble Oil & Ref. Co.'s No. 3 Cockrell, Lake Grand Ecaille ..... Drlg. sandy shale 1,330 ft.
The Texas Company's No. 4 State, Garden Island ..... Set casing 700 ft.

ST. LANDRY PARISH

Herbert-Baker Oil Co.'s No. 1 Fisher, Sec. 10-3S-4e ..... No report.

ST. MARTIN PARISH

The Texas Company's No. 3 St. Martin, Hager ..... Drlg. 3,000 ft.

ST. MARY PARISH

Louisiana Land & Exploration Co.'s No. 1 Fox, Berwick.. Rigging.
Pure Oil Co.'s No. 2 Wax Lake, Sec. 12-17s-9e ..... Abandoned 5,902 ft.
The Texas Company's No. 1 South Coast, Sec. 41-14s-10e.. No report.

TERREBONNE PARISH

Freeport Sulphur Co.'s No. 1 Nelson, Sec. 12-21s-11e .... Shut down 6,025 ft.
Charles Paggi's No. 2 Evergreen, Sec. 145-15s-16e ..... Standing 1,318 ft.
The Texas Company's No. 4 State-Bay St. Elaine ..... Drlg. hard sand, shale and lime 5,455 ft.
The Texas Company's No. 3 State, Caillou Island ..... Cemented 10-in. csg. 106 ft.
The Texas Company's No. 4 State, Lake Barre ..... Waiting cement to set 3,646 ft.; total depth 3,660 ft.
The Texas Company's No. 3 State, Dog Lake ..... Location.
The Texas Company's No. 4 La. L & E. Four Isle ..... Rig.
The Texas Company's No. 2 State, Lake Pelto ..... Rig up to work over.
The Texas Company's No. 2 State, Bay Junop ..... Derrick.

LA.-ARK. FIELDS

(Continued from Page 46)

Greenwood Production Co.'s No. 2 Norsworthy, Section 9-21-3, gauged 1,584,000 feet, total depth 2,215 feet, and A. G. Stephenson, trustee, completed No. 1 Stephenson, NE NW, Section 11-20-3, making 4,483,000 feet at 1,000 pounds from 2,168 feet. Richland completions were Industrial Gas Co.'s No. 1 Lyles, Section 23-16-6, making 39,335,000 feet of gas, total depth 2,450 feet; Richland Producing Co.'s No. 1 J. A. Ball, Section 22-16-6, gauging 44,022,000 feet, total depth 2,450 feet, and Southern Carbon Co.'s No. 1 Hallock, Section 2-16-6, 13,000,000 feet, total depth 2,440 feet. J. S. Herkness' deep test in Morehouse Parish, No. 12 Bowles, in Section 18-20-5, made a drill stem test at 3,263 feet and got six joints of salt water and resumed drilling. It was dry in the so-called Monroe second sand on a test at 2,385 feet.

Zwolle Deep Test

Loring Oil Co.'s No. 5 Bowman-Hicks, a Zwolle deep test in Section 34-8-12, cored hard lime at 4,000 feet; No. 8, in Section 33, is temporarily abandoned at 2,700 feet, and No. 1 Peavy-Wilson, a wildcat several miles south of Blue Lake production and half way between it and Zwolle, was coring lime and shale at 4,100 feet. Following the usual procedure with Blue Lake wells, R. L. Gay has allowed No. 8 Bowman-Hicks, Section 18-7-13, a mile east of the nearest producer with a salt water hole between, to stand for a month during which it has filled 1,000 feet in oil from 2,494 feet and will be standardized.

Sarepta Area

In the Sarepta district of Webster Parish, H. M. Jones completed No. 1 Cook, Section 2-22-11, pumping 30 bbls. from 2,723 feet; Kansas City Supply Co.'s No. 2 Slack, Section 36-23-11, pumped 150 bbls. oil and 800 bbls. of salt water from 10 feet of sand, total depth 2,743 feet, and Mount Vernon Oil Co.'s No. 3 Pardee, Section 3-22-11, pumped 30 bbls. from 2,653 feet.

Gulf Refining Co.'s No. 4 Nunnally, Section 29-20-15, Caddo Parish, pumped 5 bbls. from 2,365 feet, and L. A. Warren abandoned No. 1 Barr Heirs, Section 32-20-15, as a dry hole at 2,400 feet. R. W. Norton cemented 5,165 feet of 6⅝-inch on No. 1 Hill, Section 33-23-16, to test 40 feet of oolitic lime that may make a gas well, total depth 5,330 feet. The Texas Company's No. 9 Brumble, in the E. F. Mitcheson Survey of Panola County, made 500,000 feet of gas, total depth 2,350 feet, and Nos. 10 and 11 on the same survey are locations.

Lion Oil Refining Co.'s No. 2 Kelly, an old well in Section 9-17-14, Champagnolle district of Union County, Arkansas, deepened from 2,822 feet to 3,195 feet, the second sand, has 600 feet of oil in the hole and is waiting on standard rig. J. K. Wadley abandoned his Columbia County wildcat, No. 1 Longino, Section 32-18-22, at 2,338 feet, and Parker and others' No. 1 Franks, in Section 25-19-22, has been dropped as a dry hole at 2,835 feet. Brown-Lee Drilling Co. abandoned No. 1 Whitted, Section 28-4-1, St. Francis County, in northeast Arkansas as a junked hole, total depth 2,804 feet. In the Fort Smith gas district, Lavaca Oil & Gas Co.'s No. 9 Cason, Section 21-8-30, Sebastian County, gauged 1,600,000 feet of gas at 260 pounds.

Geophysical Work

There are reports of negotiations between the Gulf Refining Co. and the Bodcaw Lumber Co. of Texarkana, Ark., which involve a six-month option to the Gulf on all the lumber company's lands in North Louisiana, aggregating approximately 800,000 acres in Webster, Winn, Grant, LaSalle, Natchitoches, Rapides and Avoyelles Parishes, the only exception being those lands in LaSalle, Grant and Winn Parishes already leased to Tunica Petroleum Co. aggregating 5,000 to 6,000 acres. The purpose of the option is for geophysical work, at the conclusion of which the Gulf will have the privilege of leasing whatever lands it selects at a price previously agreed upon, but neither this price nor what the company paid for the option and survey rights is known. Meanwhile, the Gulf has two crews in the field, one of them surveying in northeastern Natchitoches Parish.

Central Louisiana, from the Texas line to the Mississippi River, is just now the favorite locality for geophysical work with 10 or 12 major companies interested in such exploration of the Fleming-Catahoula contact, and doing some scattered buying. Humble Oil & Refining Co. is reported buying in the SW cor., Township 8, Range 8, Concordia Parish, five-year commercial leases at an unnamed price. Louisiana Gas & Fuel Co., which has had a block of 100,000 acres, more or less, around Catahoula Lake in LaSalle Parish, Townships 5 and 6, Ranges 4 and 5, is renewing leases in the block as fast as they expire, and in Catahoula Parish National Oil & Gas Co. is taking a big block, mostly in Townships 9 and 10, Ranges 7 and 8, for a 3,500-foot test, and so far has assembled approximately 20,000 acres. In Tensas Parish, Stovall & White have approximately 8,000 acres centering around Section 18-10-10 on which they are required to start a well within 30 days. It will be a shallow test to 1,500 feet. In Sabine Parish, Humble Oil & Refining Co. is reported to have secured an option for geophysical survey of all the Pickering Lumber Co.'s lands, totaling several hundred thousand acres. Seip & Matthews have 25,000 acres surrounding the Barbare well in Section 30-10-9, Catahoula Parish, of which they have sold 10,000 acres to Louisiana Gas & Fuel Co., the proceeds to be spent in developing the remainder of the block, including the present well.

GULF COAST FIELDS

(Continued from Page 48)

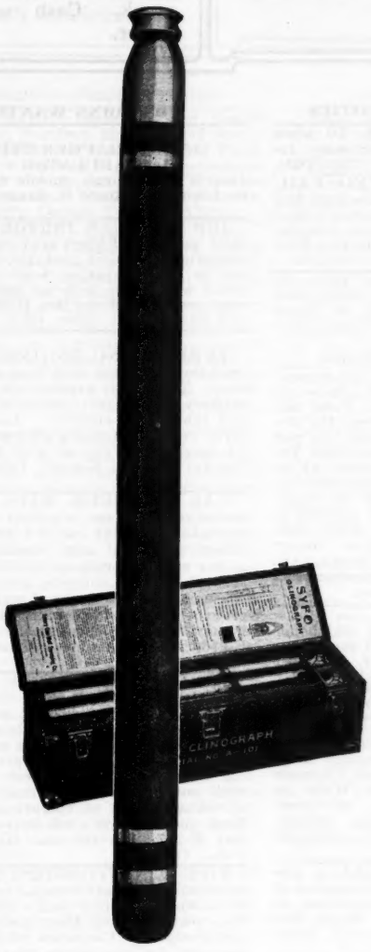
inch choke, has been pinched in since completion to 100 bbls. daily.

Among abandonments were Cranfill-Reynolds Oil Co.'s No. 1 Rorick, J. Ogburn Survey, Harris County, first test on a geophysical prospect south of Cypress; Sloan Prospecting Co.'s No. 1 Davis, Hannah Nash Survey, Harris County, second deep test on what is known as the Cedar Bayou geophysical prospect; Cockburn and associates' No. 1 Hawkins, Shepherds Mott, Matagorda County, and Pure Oil Co.'s No. 2 Wax Lake, Section 11-17s-9e, St. Mary Parish, Louisiana, first test on the Wax Lake geophysical prospect (No. 1 Wax Lake never drilled). All were deep tests. In addition, Strang Petroleum Co.'s No. 1 Good, E. Brinson Survey, Harris County, first test on the Strang-Deer Park prospect, is standing at 6,010 feet waiting orders, having failed to prove anything of interest.

The Texas Company's No. 1 Ewing-Harvey N. Little Survey, near Manvel, Brazoria County, first test on what is known as the Manvel geophysical prospect, is drilling deeper after showing salt water by a drill stem test of sand at 5,530 feet.

Of some interest is the wildcat test to be made by Houston Oil Co. on the north side of the North Dayton Dome. This company has made location for No. 1 Davis, in the H.&T.C. Survey No. 121, being 175 feet from the south line and 500 feet from the west line of the Davis-Harrison 108-acre tract.

Survey as you Go



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BLANCO COUNTY, TEXAS, leases. Best offer takes 40 acres, Surveys 5 and 6, Tracts 2, 3, 4, 5; 40 acres, tract 15, subdivision of 1,172 acres, Surveys 6, 5, 6; 23 acres, Survey 104; 40 acres, Tracts 41, 42, 43, 44, Survey 175, subdivision of 509 acres. All these leases are in active areas. A. R. McAndrew, 1159 South York, Denver, Colo.

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Eastern Refined Market Seems Shaky

Question If Present Prices Can Be Held Until Benefits of Refinery Curtailment Can be Realized. Gasoline Unsettled

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, July 14.—Refined products markets in the East Coast area present a shaky appearance this week, and it is becoming more or less of a question if present prices can be held until the beneficial results of refinery curtailment can have an opportunity to make themselves apparent.

Gasoline, which has held up fairly well in recent weeks and displayed signs of firmness as the month got under way, is showing evidence of unsettlement. The posted price remains at 9 to 10 cents per gallon, but there has been a fairly large volume done during the week at 8½ cents, and some sales are reported to have been made as low as 8¼ cents.

While practically all the minor products are weak, the drop in cylinder oils has been the feature. This decline has continued unchecked for more than a month, and current quotations average more than 32 per cent under those in effect at the beginning of the year. The drastic decline in cylinder stocks is illustrated by the following comparative table of prices effective at the start of 1930 and the current levels:

	Cents per gallon—Barreled, f.o.b. Bayonne—	
	January 1	Current
600 steam refined..	31	18
630 steam refined..	33	20
650 steam refined..	37	24
600 Pa. flash	40	30
630 Pa. flash	44	33
600 Warren "E"....	40	28
600 Oil City "E"..	39	27
Bright stocks, light	52	33
Bright stocks, dark	50	31

The substantial declines in cylinder oils, notably bright stocks, are due both to overproduction by Pennsylvania refiners, and to the increasing production of these oils by refiners in other sections, where manufacturing processes have been materially bettered in recent years.

Following the announcement of a cut of 15 per cent in refinery runs by Standard Oil Co. of New Jersey and subsidiaries, a number of other eastern refiners have announced similar plans for cutting production of gasoline, and this development is expected to rally the market within the next few weeks.

A constructive feeling was imparted by the A.P.I. report showing a drop of 663,000 bbls. in gasoline stocks for the week ended July 5.

Tank Car Gasoline

Sales continue exceptionally large, but the market is still keenly competitive, and the posted price of 9 cents has been somewhat endangered by price cutting by various factors, some of whom have sold U. S. Motor in tank car lots as low as 8¼ cents, although few sales under the 8½ cents level have been confirmed.

Refiners report continued heavy buying on the part of distributors and current sales are running considerably ahead of those for last year at this time. Although the present position of the market is easy, refiners state, constructive developments within the industry as reflected by further declines in stocks and curtailment of production, are expected to make for an improved market position by the close of the month.

Thus far, the price shading in the tank car market has been confined almost exclusively to U. S. Motor grade, and the premium qualities have remained unaffected. In as much as many of the leading interests report that 50 per cent or more of their refinery sales are of premium motor fuels, the weakness of the general market situation for U. S. Motor is not affecting refiners' earnings as much as would appear to be the case from surface indications of the market.

Tank Wagon Gasoline

Favorable weather is making for record consumption in the East Coast area, and although competition is sharp and prices are not all that could be wished for, volume is satisfactory.

Price cutting is general among many independent distributors, and gasoline at 6 gallons for $1 is by no means uncommon in the metropolitan area, with some gasolines available below this figure.

While talk of an impending tank wagon advance over the greater part of the Atlantic Seaboard territory is still being heard, it appears unlikely any such development will occur until the wholesale market shows more stability.

Kerosene

The market has softened further, with stocks on hand at refineries in this area reported fairly large. The chief cause for current weakness in this oil is reported to be the continued heavy offerings of Pennsylvania kerosene at low prices. Pennsylvania refiners, with large stocks on hand, have been cutting into sections of the eastern territory which normally draw their kerosene supplies from seaboard refineries, it is stated, and this has forced some price shading on the part of the latter refineries to hold their established outlets.

While the posted price remains nominally unchanged at 7¼ cents, the posted level is out of line with current going prices and the bulk of the business is being done at 7 cents in tank car lots at refineries, with some stocks available at 6¾ cents. The demand from the jobbing trade has shown some improvement, but competition continues keen and the market outlook does not favor any immediate recovery in the price situation.

Tank wagon kerosene was without material change, either as to demand or price. Consumption is gaining steadily, and while fair for this season of the year, is nevertheless insufficient to absorb current large offerings.

Paraffin Wax

The market has lost further ground, from a price standpoint, and slow trading is again the order of the day. With the exception of 135-137 a.m.p., which is unchanged at 4⅝ cents per pound, the market is quoted down an eighth cent per pound on all grades, revised quotations being as follows: 120-122 a.m.p., 2¾ cents; 125-127 a.m.p., 3⅛ cents; 130-132 a.m.p., 3½ cents; and 133-135 a.m.p., 4⅝ cents.

Domesitc consumers have been operating in restricted volume, and there is no inclination shown to buy forward delivery wax, notwithstanding current low prices. Buyers who ordinarily carry fairly large stocks of wax to cover current and nearby requirements are reported to have let their storage stocks dwindle to the vanishing point and are said to be buying spot wax to cover their requirements as they arise. Export operators also are holding down to a hand-to-mouth basis. Reports from refineries indicate that the statistical position of the market remains far from favorable, and distressed offerings are by no means infrequent.

Lubs

The decline in cylinder stocks has continued unchecked, and prices are sharply lower all along the line. The market, in effect, is still in nominal position, prices varying with the eagerness of refiners to unload and the willingness of buyers to take on additional committments.

Business is reported at the following levels: 600 steam refined, 18 to 19 cents; 630 steam refined, 20 to 21 cents; 650 steam refined, 24 to 25 cents; 600 Pennsylvania flash, 30 cents; 630 Pennsylvania flash, 33 cents; 600 Warren E, 28 cents; 600 Oil City E, 27 cents; bright stocks, light, 33 cents; bright stocks, dark, 31 cents.

Reports from the field show a wide variance of opinion among refiners as to spot values, but there appears to be plenty of oil available at the prices mentioned, and the market therefore has been established at these low levels. Buyers continue to hold off, pending further developments. Considerable business has been deferred now, and it is believed any sudden strengthening in the price structure would bring out a heavy buying movement.

Red and pale oils, while showing a little softness in sympathy with the sharp declines in cylinder oils, have not yet been readjusted downward. The market for these oils in local territory is pretty well stabilized, with a large part of the tank car movement against term contracts.

Gas Oil

In keeping with the remainder of the refined products market in the East, gas oil is in easy position, with the posted price the exception rather than the rule in current trading.

Leading refiners hold the posted quotation for 28 plus recycled oil at 5¼ cents per gallon, but stocks are available freely at 5 cents, and reports of sales at 4¾ cents, and occasionally as low as 4⅝ cents, are common.

Tank car movement is showing seasonal quiet, with no improvement looked for until the fall consuming season gets under way.

Petrolatum

The market has eased off a little, reflecting current weakness in other minor refined products markets. Snow white is reported available at 8 cents per pound, a reduction of an eighth cent, with cream showing a corresponding decline at 6 cents per pound. Other grades are unchanged.

Demand for petrolatum has slackened, the general weakness in other branches of the petroleum market having resulted in the development of bearish sentiment among petrolatum buyers.

Fuel Oil

Bunker "C" remains unchanged at $1.15 per barrel, in bulk, f.o.b. East Coast refinery markets, and while some business is being done under these levels from time to time, the posted schedule is being adhered to by all of the principal factors on their regular business, it is stated.

Marine sales are holding up well, and the outlook remains favorable for the remainder of the year, with most of the large steamship companies having covered their requirements by contracts placed at the beginning of the year.

Most of the price cutting on bunker "C" oil which has developed thus far in the eastern area has been on sales for industrial consumption. Considerable of this business has been taken under the $1.15 per barrel level, it is reported, although the posted price has not been shaded by any substantial amount.

Diesel Oil

While the market tone may be characterized as soft, this is due more to weakness in other branches of the market than to any unfavorable development respecting the Diesel oil situation directly.

Refiners continue to maintain the market unchanged at $2 per barrel, bulk, at terminals, with a substantial movement on contract. The current unfavorable statistical position of the refined products market, as reflected by topheavy refinery holdings of many products, has affected Diesel oil to the extent that it now appears improbable any price advance will be witnessed on this oil during the next several months.

Gulf Export Market

Another quiet week was reported in the Gulf export market. The only inquiry in the open market was one for 3,500 tons of 64-66 naphtha for shipment to England. It was reported that the inquirer was offering 10 cents, c.i.f., equivalent to approximately 8½ cents at the Gulf.

Large integrated companies with foreign marketing subsidiaries were moving gasoline out of the Gulf in good volume but this business did not reach the open market, being handled by production and purchases of the parent companies.

California gasoline trading for export shipment was reported quiet, and intercoastal activity was also sluggish. It was reported that five cargoes of California gas oil were offering for shipment to the East Coast at 90 cents per barrel, with no takers, and buyers here were inclined to look for a break to 75 to 80 cents in the California gas oil market shortly.

Mexican and Venezuelan crudes were without activity or quotable change during the week.

Export circles here are watching the Gulf price situation with close attention, with numerous rumors still in circulation regarding the possibility of some early revision in the posted basis. Nothing definite regarding any pending price change has been heard yet.

Petroleum Exports

Influenced by the triple holiday over the week-end, export shipments of refined products from the local market fell off considerably during the week ended July 5. While there were a number of inquiries for refined products in the market during the week just ended, the volume of actual new business received was light, and operators were still complaining regarding the paucity of sales.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	July 5	June 28	June 21
Gasoline	325,000	250,000	530,000
Naphtha	45,000	745,000	105,000
Kerosene	10,000	35,000	12,000
Fuel oil	53,000	180,000	10,000
Lubricating oil	405,000	1,180,000	895,000
Petroleum, refined	510,000	925,000	1,040,000
	Pounds		
Petrolatum ...	.....	25,000	54,000
Paraffin wax..	935,000	920,000	1,065,000
Refined	.....	275,000	.....
Scale	490,000	.....	302,000
Lubricating grease	1,225,000	845,000	725,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended July 5 totaled 1,948,000 bbls., a daily average of 278,283 bbls., compared with 1,738,000 bbls., a daily average of 248,286 bbls. for the previous week. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	202,000
Boston	31,000
New York	841,000
Philadelphia	293,000
Others	404,000
Total	1,771,000
Daily average	253,000
At Gulf Coast Ports—	
New Orleans and Baton Rouge..	142,000
Tampa	35,000
Total	177,000
Daily average	25,286

(Continued on Page 139)

Chicago Spot Market Reported Quiet

Unfavorable Weather Partly Responsible. Contract Business Very Fair. Price Situation Remains Unchanged

By J. B. Waldo

CHICAGO, July 14.—Aside from the contract business which continues very fair with most refiners there was little doing in the market this morning. The spot demand was noticeably quiet, both with the large refiners and with the brokers. One reason for this condition is found in the great heat of last week which was followed over considerable portions of this territory by much colder weather with some rain on Sunday. This week opened clear but with unusually low temperature for the time of the year. The price situation remains unchanged with the major refiners holding for 7 cents as their spot market price but gasoline is freely offered of first quality at 6 cents and less well known but possibly equally good motor fuel is to be bought at as low as 5¾ cents from both refiners and brokers. Some of this lower priced gasoline is restricted to differential territories but a sufficiency is available for any part of the territory at these prices.

The demand for the higher gravities lagged on Monday and prices were soft and in some cases quotably lower, the 64-66 375 being sold at 6¾ cents in some instances. The contract demands for the antiknock gasolines is very good and there are some buyers in the spot market for antiknock gasoline but the large demand is for the contract advertised brands.

Kerosene was inactive Monday. There was little doing in domestic furnace oils for immediate shipment. Inquiries for heavy industrial fuel oil were few although there were some telephone calls from buyers but their requirements were small. In all products from gasoline down to the heavy fuel oil there is much said regarding the small size of the orders being placed for prompt shipment. One car orders seem to be the rule in all the lighter products and a good many single car requisitions are being made for even heavy fuel oil. The size of the orders is reducing the volume of business. In some instances sellers report they have entered nearly as many orders for the first part of year as a year ago but that the volume of their sales has been much reduced by the size of the individual order.

Larger Demand

In this market there was a larger demand for gasoline, both in the spot and the contract market. Towards the close of the week there was considerable urgency displayed by jobbers in regard to having prompt shipments and car numbers were inquired for, in some cases before the cars could have left the refinery. The ordering was careful and conservative without speculation as to possible increases in prices. In fact, the average jobber who buys in the spot market does not believe there will be much change in prices over the remainder of the touring season and if there is a slight advance he does not care for he has a liberal margin on which to work. All of last week U. S. Motor Gasoline was to be had freely at 6 cents, Group 3, for shipment to any point in the territory and the gasoline from certain refiners was selling at 5½ cents for Michigan and Ohio delivery and at 5¾ cents for Illinois and Indiana delivery. The Detroit quotation was 9⅛ cents delivered. The refiner making the quotation claimed he was doing so because of the equally low prices made by other refiners in this territory, something generally suspected but not as generally proven.

Some of the trade have tried and tried hard to get a better price for Oklahoma gasoline. They claim it cannot be bought at this time at less than 6 cents for resale and should be bringing in this market 6¼ cents. One trouble is that gasoline which is entirely acceptable to the jobbers is offered at 6 cents to practically every buyer and the larger buyers can purchase at the same price as the broker, making their cost 6 cents, Group 3, for U. S. Motor Gasoline. There are some who honestly expect that the curtailment of crude runs and the larger demand for gasoline over the next six weeks will so reduce the stocks on hand that it will be possible to ask and secure a little better price, but those right on the firing line see no improvement in prices until the winter season unless crude runs are much more drastically and quickly curtailed than appears to be the present plan of the leading refiners. July wants are practically covered at the middle of the month and the important buyers are looking after their August requirements now and with July and August buying out of the way, the September purchases will be on a restricted scale as every jobber will be planning to reduce his stocks. Right now the average jobber has drawn his stock down to a lower level than say the beginning of June, but this does not mean he has any intention of adding to these supplies. He is simply going to buy as he needs the material, buying, as the saying is, "what he wants when he wants it."

Antiknock Sales

The demand for the antiknock gasolines is still strong and refiners, especially of the Ethyl blend, report their sales are 100 per cent of their contracts. There is also a good inquiry for a good antiknock gasoline which can be used to compete with Ethyl, from the cut-price stations. They cannot have Ethyl and cut the price of their white gasoline, yet their very plan of operations provides for the selling of the latter at a price under the regular scale. There has been very little demand for the higher gravities and by some refiners the 60-62 400 is offered as low as 6 cents, Group 3, basis for shipment in differential territory and at very little more over the territory. The natural gasolines have been dull and rather weak in this market. It is understood there have been a couple of small "bootleg" cargoes of gasoline gathered for export but that the export association has not done any buying for July.

Kerosene and Distillate

There is absolutely nothing that can be said regarding kerosene, except that it has fallen to such a low price that it is depressing the prices for distillate. Buyers figure that no matter how good the distillate is it is not as good as kerosene and therefore must sell at a lesser price. The 41-43 gravity is being freely offered to brokers at 3 cents and large dealers can buy at that price. To the smaller buyer the price is 3¼ cents.

The spot business in furnace oils is limited to a few cars of various kinds of material. A little distillate, a little gas oil, some 28-30 and a little 18-22 fuel oil are being sold, but the bulk of the business is small and prices are unchanged. The U.G.I. gas oil is now generally quoted at 2 cents to gas companies and is being bought for resale at 1⅞ cents. This seems like a very low price and the thought is that it should induce some of the gas companies to begin filling their storage, but so far as known they are not tempted yet. The demand is very moderate right now. Some refiners are holding for higher prices but are not getting the business.

Furnace Oil Contracts

The making of furnace oil contracts for the coming season is quite active now. Some buyers and some dealers have been waiting for developments before coming to some sort of an agreement. There is really no change in the type of contracts, practically every one being based on some published quotation which is to set the price at the date of shipment. The price is seldom that of the publication but is usually the average or is some fraction less than the low. The dealers believe there will be a large demand this season on account of the increase in the number of burners. The burner manufacturers in this vicinity are just beginning their fall campaign which is their real harvest time. The dealers in fuel oils do not anticipate any real difficulty in suppplying any likely demand for the distillates or gas oils and the lighter gravities of fuel oil. They say these are in ample supply or can be supplied by blending. The great trouble is to find the supply of low sulphur, low viscosity, zero 18-22 fuel oil and none of the more prominent dealers at the present time feel they have their requirements sufficiently covered.

Bright Stock

The reduction made in the price of Pennsylvania crude last last week, while only 15 cents a barrel, still had a rather unsettling effect on the bright stock market. Just previous to this reduction, the market had seemed considerably more firm for the eastern bright stocks and the price was being held by most sellers at 25 cents, an advance of 2 cents from some of the previous low quotations. These prices are still substantially below the prices asked for western bright stocks. The low price, so far as known, for any western bright stock has been 28 cents and this is below the price which is the nominal holding price for western bright stocks. Neutrals are easy at some decline. The demand is sluggish for all kinds of lubricating oils. Motor oils are moving slowly but rather steadily as the jobbers replenish their supplies from time to time as occasion warrants. There is little industrial demand as so many of the plants are closed down for the summer vacation period.

Fuel Oils

Heavy industrial fuel oils are doing a little better as to the demand. That is the report of some of the fuel oil men, while others see no improvement. Some industrial plants which have been shut down are starting up for their fall operations and concerns which supply them with fuel are doing a better business. Other sources which are closing down for the summer vacations may influence the business of another dealer who finds his business not so good. There is really little change. Most of the industrial plants have drawn their oil stocks down to a very low level and as they begin operations again they become immediately active buyers of fuel oil for their requirements which are moderate.

Each month, the monthly buyer has found that he could buy a little more cheaply and this in spite of many arguments by sellers on the coming strength in the market. So why buy ahead when next month one can buy at a little less cost? Today a high sulphur 18-22 fuel oil is being sold in this city at 47½ cents a barrel and a zero low sulphur at 52½ cents a barrel. A 22-26 fuel oil, not zero, is worth 60 cents and a 24-26 is worth the same or a little more. For the 28-30 fuel oil 80 cents is the common price. There are few inquiries and generally the demand is light.

REFINED MARKET IN EAST SEEMS SHAKY

(Continued from Page 138)

At all United States Ports—

Total	1,948,000
Daily average	278,286

Distribution of total imports is as follows:

Crude	1,186,000
Gasoline	366,000
Gas oil	17,000
Fuel oil	379,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf ports for the week ended July 5 totaled 699,000 bbls., a daily average of 99,857 bbls., compared with 447,000 bbls., a daily average of 63,857 bbls. for the previous week. Details follow:

(Barrels of 42 Gallons)

At Atlantic Coast Ports—	
Baltimore	85,000
New York	334,000
Philadelphia	280,000
Total	699,000
Daily average	99,857
At Gulf Coast Ports—	
All ports	None
At Atlantic and Gulf Coast Ports—	
Total	699,000
Daily average	99,857

All of the week's receipts of California oils were of gasoline.

Heavy shipments of California gasoline from Pacific Coast ports for the East Coast and Gulf Coast were reported for the week, shipments exceeding 800,000 bbls. Shipments for the week (with identity of owner of tanker moving the gasoline where such owner is an oil company) follow:

For New York—78,100 bbls. of gasoline on the Meton; 78,500 bbls. of gasoline on the Samuel Q. Brown (Tide Water); 76,900 bbls. of gasoline on the Larry Doheny (Richfield); 96,400 bbls. of gasoline on the Broad Arrow (Standard Transportation Co.—S.O.N.Y.); 77,400 bbls. of gasoline on the Hadnot (Cities Service); 77,300 bbls. of gasoline on the Baldhill.

For Port Arthur—72,000 bbls. of gasoline on the New Jersey.

For Baltimore—73,000 bbls. of gasoline on the William H. Doheny (Pan American), and 73,900 bbls. of gasoline on the Occidental (The Texas Company).

For Philadelphia—98,400 bbls. of gasoline on the Chester Sun (Sun Oil Co.).

MAY DRILL IN BRAZIL

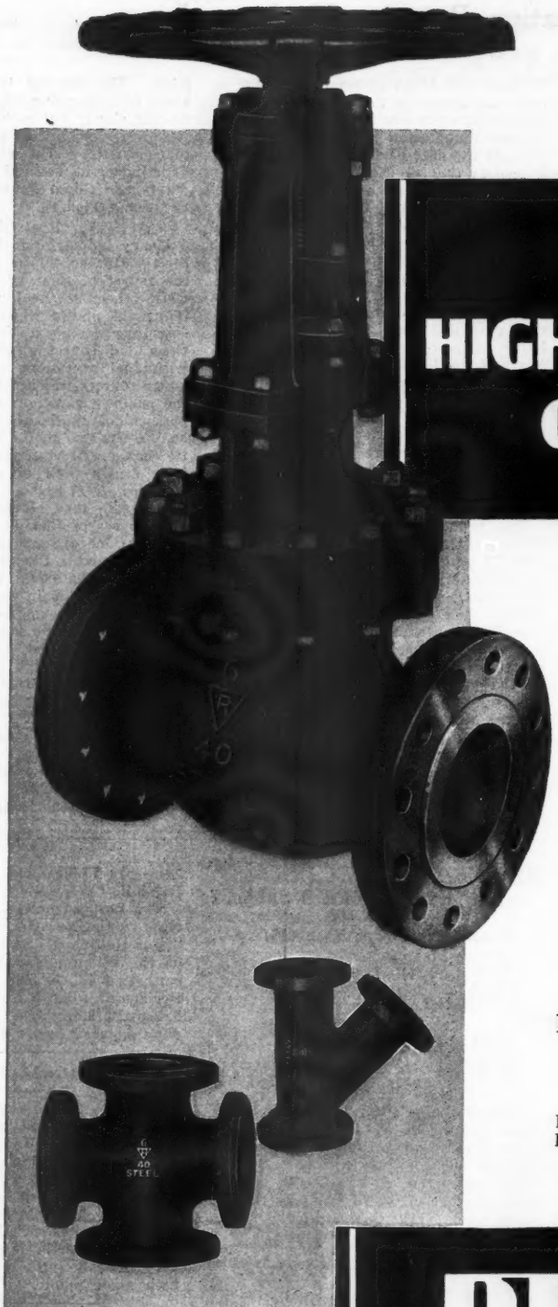
A company is being formed in Brazil with American and Brazilian capital to be known as the Companhia Brasileira-Americana de Petroleo. The purpose of the new organization, whose capitalization is estimated at $5,800,000, is to develop petroleum deposits located in the State of Alagoas. While mention has been made of oil shale deposits in that State, very little definite information has ever been made public.

CANADIAN GEOLOGY

CHATHAM, Ontario, July 12.—Announcement has been made by Dr. G. S. Hume of the Geological Survey of Canada that the marine strata in Alberta hitherto known as the Benton shale, and lying between the Blairmore and Belly River formations, will be known in future as the Alberta shale. It has been determined that this shale is not the Fort Benton of the Missouri River section.

TRAVELING BY PLANE

W. F. Brannan, president, Anchor Post Fence Co., Baltimore, Md., and E. A. Greene, southern sales manager, Houston, Tex., arrived at the municipal airport, Tulsa, in the company's Travelair plane for a visit to Dresser & Gorton, Inc., state distributors of the company's products.



Safe HIGH TEMPERATURE OPERATION

COMBINATION of high temperature and pressure requires exceptionally close control of every step in valve manufacture. Shrinkage cracks and strains, porosity, segregation and other defects are commonly found in cast steel unless every foundry operation is under the direct control of trained metallurgists and highly technical steel foundry operators.

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Natural Gasoline Manufacture

President Lederer Announces Natural Gasoline Committees

President E. R. Lederer of the Natural Gasoline Association of America has announced the appointment of the following committees:

Executive

E. R. Lederer, chairman, Texas Pacific Coal & Oil Co.; A. J. Schlosser, vice chairman, Barnsdall Oil Co.; F. L. Chase, Lone Star Gas Co.; M. E. Mockley, Amerada Petroleum Corp.; George A. Shaner, Carter Oil Co.; E. R. Filley, The Texas Company; D. C. Williams, Continental Oil Co.

Finance

A. J. Schlosser, chairman, Barnsdall Oil Co.; M. E. Mockley, Amerada Petroleum Corp.; George A. Shaner, Carter Oil Co.; E. R. Filley, The Texas Company; D. C. Williams, Continental Oil Co.

Research and Educational

D. E. Buchanan, chairman, Hanlon-Buchanan, Inc.; R. C. Alden, vice chairman, Phillips Petroleum Co.; W. N. Corbet, Eagle-Picher Lead Co.; E. R. Filley, The Texas Company; Emby Kaye, Skelly Oil Co.; W. A. Melton, Deep Rock Oil Corp.; E. L. Peck, Empire Oil & Refining Co.; W. W. Robinson, Jr., The Texas Company; S. S. Smith, Shell Petroleum Corp.

Gas Contract

T. R. Goebel, chairman, Skelly Oil Co.; J. W. Cowles, vice chairman, Shell Petroleum Corp.; J. H. Boyle, Hanlon-Buchanan, Inc.; Thomas J. Casey, Barnsdall Oil Co.; J. F. Dyer, the Henderson Co.; S. J. Fraser, Prairie Oil & Gas Co.; J. R. Freeman, Carter Oil Co.; Dean Hiatt, Texas Pacific Coal & Oil Co.; M. T. Kirk, Phillips Petroleum Co.; E. C. LeFevre, Empire Oil & Refining Co.; G. L. Pitcher, The Texas Company; L. G. Rheinberger, Sinclair Oil & Gas Co.; D. C. Williams, Continental Oil Co.; A. B. Morris, Forrest E. Gilmore Co.

Gas Testing

George P. Bunn, chairman, Phillips Petroleum Co.; L. G. Rheinberger, vice chairman, Sinclair Oil & Gas Co.; C. L. Baker, The Texas Company; Paul M. Bowman, Amerada Petroleum Corp.; W. F. Crawford, Deep Rock Oil Corp.; Paul

(Continued on Page 152)

BIG LAKE TO CONSTRUCT SECOND REAGAN PLANT

The Big Lake Oil Co. has let a contract for the construction of a gasoline plant of the oil absorption type to be located in the Reagan County Field of Texas. The plant will have a capacity of 50,000,000 cubic feet of gas daily and will be completed in 90 days.

Approximately 170 wells are now producing crude oil and casinghead gas in the Big Lake Field at sand depths between 2,400 and 3,000 feet. In addition, four wells are producing below 8,000 feet. The Big Lake company at present has a low pressure plant of the oil absorption type located at Texon. This plant which has a capacity of 20,000 gallons daily takes gas from the shallower wells which has a gasoline content around 4 gallons per 1,000 feet. Some gas is also obtained from the deep sand producers. This gas yields less than 1 gallon per 1,000 feet.

The Signal Hill Gasoline Co. which has the largest natural gasoline plant in the field has ordered equipment for a second plant which will be located at Santa Rita. This plant will take gas from the shallow wells and also two of the deep sand producers. The gas flow of the four deep sand wells is approximately 50,000,000 feet of gas daily.

Construction and Operation

OFFICE FUNCTIONS*

Just as in any other business the natural gasoline department has a routine business office or clearing house, without which there would be chaos. This office is in control of a chief clerk under whom is co-ordinated all of the paper work of the department and through whom flows practically all of the routine business correspondence to the several plants.

Requisitions for material clear through the chief clerk, although approval for certain classes of purchases rests with the superintendent or his assistant. It is up to the chief clerk to hold requisitions down to the absolute minimum. He is generally a man with considerable plant experience and has such an appreciation of material requirements as to make his passing upon requisitions intelligent. When in doubt he can contact with the field superintendent, who will have special information with reference to the particular requirements. It is very important to control material purchases at this point.

Receipts for material, receiving reports, emergency field purchase orders with accompanying explanations of the emergency flow to this office for noting and checking and delivery to purchasing and accounting departments. Gas charts come to the office for observation before they are passed on to the gas accounting unit. In this way poor charts and "out of order" meters may be observed and the plant contacted to make sure that a plant or district meter man has taken steps to correct the trouble.

All reports from the meter man and gas testers come to the chief clerk, one of whose staff makes suitable records of their contents in a permanent ledger. Tabulated "returns" of quarterly gas tests, showing also the last previous tests for comparison, are prepared for the notice of and study by the superintendent. As these tests flow into the office they are compared with previous tests. Even though gas testers are usually men of proven worth, it is possible for their machines to be "off" in one respect or another, and a series of tests may be made which reflect either too high or too low a yield. Circumstances may have made witnessing of other parties' machines inconvenient or impossible, and an inaccurate meter, deficient compressor or what not may have worked a hardship upon the producer or manufacturer. As soon, therefore, as test reports come in, irregularities can be noted, and the tester apprised of the situation, if he has not already discovered it for himself. The several leases can be rechecked and the rest of the tests made without question of accuracy. It should be stated, however, that even wide variations in gasoline recovery found by the test car do not mean per se errors in testing or computation. The difference may be accounted for by different operating conditions, atmospheric temperatures, etc. The precaution suggested is only a precaution and serves as a check and safeguard to protect buyer and seller of casinghead gas.

When a gas contract has been approved, and an authorization for work made, the chief clerk causes the information to be transmitted to the proper field representative. Copies of the formal authorization to the several office departments are passed by him to them for record and informative purposes. When the work has been performed, the information clicks through the business office, where the labor costs of the job are recorded and the accounting department formally advised of the completion of the job.

Operating Records

Into this office also come all of the operating records, including production efficiencies, monthly inventories, laboratory reports, etc. It is very important to make observations of the operating records and laboratory reports. An intelligent clerk can in a matter of minutes check quite a number of these reports and discover abnormalities that may account for decreased production. He may notice high water temperatures or it may be an increasing saturation of the denuded oil. The first may be indicative of failure to clean cooling equipment, channeling of cooling water; the latter may indicate almost any sort of trouble in the distillation equipment. The preheater may be leaking or the live steam used may be inadequate. While the plant should discover these difficulties, one may expect that these things will from time to time be overlooked. Prompt warning by the office direct to the plant or through the field superintendent may, and often does, stop quite an important leak.

The plant looks to the chief clerk for instructions as to what products to manupfacture. From him issue shipping orders received from the sales department. Bills of lading are anticipated by him from the plant, and immediately upon receipt are passed to the sales department office. Promptness in this regard is of foremost importance and the office must often apply special pressure to get the ladings without delay.

Pay rolls and time sheets are checked and approved by the chief clerk's office. Supervision is exercised to make certain that all labor charges are properly made and that the general labor roll is in line with expectations. Expense accounts are properly charged against existing accounts and passed to the superintendent for approval.

From the foregoing it may be seen that the "back office" not only records the operations of the gasoline department, but actually plays a decided part in controlling those operations, and has an important bearing upon the efficiency of the department.

*Nineteenth of a series of articles explaining the inner workings of a natural gasoline organization. The series was prepared by an operator actively engaged in all phases of construction and operation.

Who's Who
IN NATURAL GASOLINE MANUFACTURE

VIRGINIAN GASOLINE & OIL CO.

A recent survey of the natural gasoline industry in the United States showed that the Virginian Gasoline & Oil Co. of Charleston, W. Va., was the second largest manufacturer east of the Mississippi River. The company is a subsidiary of the Columbia Gas & Electric Corp., one of the major corporations of the gas and electrical industries with large holdings in eastern states.

The subsidiary company is a producer of crude oil and natural gas as well as a natural gasoline manufacturer, operating several hundred wells in West Virginia and Kentucky. The company at present is operating 19 gasoline plants with a rated capacity of 204,700 gallons daily. Two of these plants are located in Kentucky and the remainder in West Virginia.

The Virginian company is the largest operator of plants of the charcoal type. The company was one of the pioneers in this type of plant construction and now has seven plants operating with a capacity of approximately 100,000 gallons daily. One of the plants located in Jackson County, West Virginia, has a capacity of 40,000 gallons daily and another in Kanawha County of the same State has a capacity of 25,000 gallons daily.

Operating headquarters of the company are located at Charleston. R. N. Parks is general superintendent of plants. The company's products are sold to a large number of eastern refiners.

Following is a list of the company's plants:

Location—	Daily capacity (gals.)
Jackson County, W. Va.	40,000
Martin County, Ky.	10,000
Cabell County, W. Va.	18,000
Kanawha County, W. Va.	25,000
Kanawha County, W. Va.	40,000
Boyd County, Ky.	24,000
Kanawha County, W. Va.	2,000
Roane County, W. Va.	12,000
Kanawha County, W. Va.	3,500
Wayne County, W. Va.	3,500
Lincoln County, W. Va.	12,000
Lewis County, W. Va.	3,000
Kanawha County, W. Va.	2,500
Clay County, W. Va.	1,500
Kanawha County, W. Va.	1,200
Kanawha County, W. Va.	1,200
Kanawha County, W. Va.	1,000
Kanawha County, W. Va.	3,500
Roane County, W. Va.	800

WESTOAK ANNOUNCES SAYRE GASOLINE PLANT

The Westoak Gasoline Co. has announced plans for the construction of a gasoline plant near Sayre in Beckman County of western Oklahoma. The plant, which will operate with gas from the Sayre gas field, will cost approximately $125,000.

The plant is part of a project which calls for the construction of a $500,000 carbon black plant by the Oklahoma Carbon Industries, Inc. The latter plant will be located 4 miles west of Sayre.

Officers of both concerns have been established at Sayre. C. K. Springfield is vice president and general manager of the Westoak company; C. W. Seegar is in charge of construction at the carbon black plant.

INCREASE CAPACITIES

The California Gasoline Co. of Texas is to increase its gasoline plant in the Overall Pool from 1,500,000 feet per day to 2,500,000 feet per day, by adding two compressors. Residue gas is to be used to repressure the Overall Pool, and the rest to go to the Oklahoma Natural Gas Corp. Present throughput of the plant is 375,000 feet per day of 2.5 gallons per 1,000 feet, content.

The gasoline plant in the Weaver Pool, Coleman County, Texas, is being increased from 200,000 feet daily to 1,500,000 feet daily.

The maximum output of this plant will be 5,000 gallons per day. There are 2,500,000 feet of available gas daily from this pool, content of the gas running an average of around 2 gallons per 1,000 feet. The output of the plant is sold to the Adams Oil Co. at Coleman for local sales.

Brief Items for Petroleum Refiners

ELECT McDOWELL SALES HEAD OF MID-CONTINENT

R. W. McDowell, who has been general sales manager of the Mid-Continent Petroleum Corp. for the past year has been elected vice president of the corporation and placed in charge of all sales according to announcement by Jacob France, president.

Mr. McDowell succeeds D. W. Moffitt who last year retired due to ill health after heading the Mid-Continent sales and

R. W. McDowell

refining activities for several years. Mr. Moffitt who is confined to his home at Tulsa will continue as a director of the company.

Although one of the youngest executives in the Mid-Continent Field, Mr. McDowell is widely known in marketing circles. He joined the Mid-Continent corporation in 1928 when the properties of the Black Hawk Oil Co., Waterloo, Iowa, of which he was president were purchased. His early experience was with the Producers & Refiners Corp. Joining that organization following his discharge from the army where he served as a first lieutenant during the World War he became assistant sales manager.

Commenting on Mr. McDowell's election Mr. France said:

"The past two years have marked a period of extensive growth for our company in the marketing phase of the business. Expansion of station facilities and increased distribution of our Diamond brand products, through our own outlets and through jobbing channels, has been carried on under Mr. McDowell's direction in a manner which has commanded the attention of the company's executives and directors. Not only have the company's stations been greatly increased in number, but McDowell has built up a strong and smoothly functioning sales organization whose ability is reflected in an increasing volume of sales."

ADDITIONS TO STAFF

Recent additions to the Barnsdall Refining Co. staff are Joseph F. Adams, who will be assistant sales manager at the Tulsa office. Mr. Adams was for many years associated with the Wadhams Oil Co., Milwaukee, Wis. Willard Johnson, formerly of the North Shore Petroleum Co., Chicago, will represent the "B Square" products in Michigan from the Chicago office.

CALIFORNIA STANDARD ANNOUNCES NEW POLICY IN RESTORING PRICES

LOS ANGELES, Calif., July 15.—The Standard Oil Co. of California climaxed the most drastic price war which has ever visited the Pacific Coast by restoring the price of gasoline to its original status on July 12. During the progress of this costly competitive condition gasoline prices declined far below the actual cost of manufacture and at one point motorists were sold gasoline for 3 cents per gallon. This is just the amount of the state gasoline tax. The company in its announcement said:

"Effective Saturday morning, July 12, at the opening of business, the Standard Oil Co. of California will restore its prices for gasoline to levels prevailing prior to the beginning of the so-called price war. The events of the past month, the company believes, have demonstrated to the oil industry that indiscriminate price cutting benefits neither the supplier nor the dealer, and that it must now be realized that orderly marketing conditions and stabilized prices need the co-operation of all of those engaged in the oil business. It is the hope of the company that this step will not only bring order out of existing chaos, but will also result in stabilization, with consequent benefit to the oil industry and to the general welfare and prosperity of the Pacific Coast.

"Only the prompt termination of the price war which has been raging on the Pacific Coast can save the oil industry and many thousands of persons engaged in the sale of petroleum products from catastrophe. The prosperity of the industry, and those associated with it, is a matter of great consequence to the welfare of all business. If the oil industry, which with its huge investments and hundreds of thousands of stockholders and employes is one of the greatest economic units of the Pacific Coast, fails to prosper, the effect on other businesses, already depressed in many respects, would be disastrous.

"So far as crude oil is concerned, producers have done their share. Throughout California they have co-operated to confine the production of crude oil to the demand and to conserve for future requirements this invaluable resource, the waste of which is indefensible. This is only the first step. It loses its effectiveness if manufacturers and marketers of the refined products do not similarly refrain from overproduction through the withdrawal of crude oil already in storage.

Prohibiting Agreements

"Laws enacted nearly 40 years ago to meet different conditions have been interpreted to prohibit agreements to curtail the production of refined products as well as agreements to regulate the price structures under which they are sold. Nevertheless, much can be accomplished if those engaged in the industry will use their individual efforts to stabilize marketing conditions for gasoline and if they will practice fair dealing in competition. Without a production of gasoline restricted to the demand, and without stabilized marketing conditions

(Continued on Page 152)

MAY BUILD REFINERY

A group of oil producers and business men at Bolivar, N. Y., are considering the advisability of building a lubricating oil refinery near that city. The plant if built will operate with Pennsylvania grade crude oil from the New York and Pennsylvania fields. The oversupply of crude oil which has greatly reduced prices in the Pennsylvania fields during the past year is responsible for the move to build a refinery.

At a meeting held last week, C. M. VanCuren acted as chairman. Several producers spoke in favor of the refinery construction. Capacities from 500 to 2,500 bbls. daily were suggested for the plant. It is expected that definite decision will be made before the end of the month.

SUNSET BUYS SEABOARD

The Sunset-Pacific Oil Co. has taken over the properties of the Seaboard Oil & Refining Co., Ltd., according to an announcement by H. F. Warner, vice president of the former company. The Seaboard company has marketing properties and a refinery at Vancouver, Canada.

The Sunset-Pacific Oil Co. is one of the large independent marketing companies on the Pacific Coast with a 10,000-bbl. refinery at Vernon, Calif. The consideration involved in the purchase exceeded $1,000,000.

STANDARD ANNOUNCES ADVANCE

CHICAGO, July 14.—The Standard Oil Co. of Indiana effective today has advanced the outside price of distillates 2 cents a gallon. This advance applies to deliveries to customers in country towns outside of those where the company has a bulk station. No change in Chicago rates.

HENRY SMITHER DIES

Henry Carpenter Smither, a director of the Indian Refining Co. died at Lawrenceville, Ill., on July 13 following an operation for appendicitis. He was born at Fort Sill, Okla., where his father was the commanding officer. Following his graduation from West Point he served through three wars receiving the distinguished service medals of the United States and Panama and a commission in the French Legion of Honor.

He was the chief co-ordinator of the budget commission from 1921 to 1923 and served in various other capacities until his retirement as brigadier general in 1927. Since his retirement he has been active in the management of the Indian company.

BUYS GILLILAND STATIONS

Phillips Petroleum Co., Bartlesville, Okla., this week purchased the marketing facilities of the Gilliland Oil Co. of New Mexico, a wholly owned subsidiary of the Reserve Petroleum Co. The purchase consists of eight retail service stations in Albuquerque; one each at Santa Fe, Ute Park, and Las Vegas; six bulk stations and 118 resale retail outlets located in Albuquerque, Santa Fe and other strategical points in New Mexico. The refinery and other interests of the Gilliland Oil Co. are not affected by this transaction.

With the latest purchase the Phillips Petroleum Co. now owns over 950 retail and wholesale stations, and over 7,700 retail outlets.

INDUSTRIAL ENTERTAINS

CHICAGO, July 12.—The Industrial Petroleum Co. gave its annual outing to the oil fraternity of this city and elsewhere yesterday at the Butterfield Country Club. Many were present from out of town.

C. M. RIDGEWAY IN CHARGE OF OLD DUTCH REFINERY

MUSKEGON, Mich., July 12.—E. G. Guy, superintendent of the Old Dutch Refining Co. plant east of the city limits of Muskegon, has resigned from this position which he has held since the plant was opened in September, 1929.

Mr. Guy has made no definite announcement of his plans for the future although he intimated today that he may remain in Michigan oil fields. He has been succeeded at the Old Dutch plant by C. M. Ridgeway, of Oklahoma, formerly associated with the Smith Engineering Co., of Kansas City, Mo.

Mr. Ridgeway, a native of Pennsylvania, is a graduate of the University of Michigan and has been engaged in the oil business for several years. For two years previous to his association with the Smith Engineering Co. he was associated with E. B. Badger & Sons.

Mr. Guy came to Muskegon from Wichita Falls, Tex., to take charge of the Old Dutch plant. The plant has a capacity of more than 3,000 bbls. of crude daily and is now maintaining a daily run of about 2,000 bbls., or about the same as its run from the Muskegon oil field.

For eight years before coming to Muskegon, Mr. Guy was superintendent of a 3,000-bbl. refining plant owned and operated at Wichita Falls by the Orient Petroleum Co. Here he had specialized in the production of naphthas, the principal product of the Old Dutch plant. Mr. Guy now has had about 18 years of experience in the refining business.

BRING OUSTER SUIT

GREAT FALLS, Mont., July 12.—A suit has been brought to oust the Rainbow Refining Co. and others from the possession of the Great Falls Refining Co.'s property in this city. It appears that the Rainbow Refining Co. entered into a contract with the Great Falls Refining Co. to buy the refinery on the north side of the Missouri River.

Five thousand dollars was paid down as the initial payment and then the Rainbow Refining Co. is said to have become delinquent and has not paid any further sum of the amount agreed upon. The Great Falls Refining Co. now seeks to have its title cleared of any cloud and asks for cancellation of the purchase contract.

STANDARD (INDIANA) PRORATION

The Standard Oil Co. of Indiana is continuing its policy of keeping current refinery operations in line with the demand for refined products according to a statement issued by Edward G. Seubert, president of the company. Mr. Seubert said:

"We announced several months ago that we were reducing our crude runs to the actual requirements of our current business. We have adhered to this policy all along, keeping our runs down to amounts required to maintain a balance between production and consumption and tending to reduce stocks of refined products in storage. Our company is doing its full share toward establishment and maintenance of a sound economic situation in the oil industry and business."

COMPOUNDS OILS AND GREASES

CHICAGO, July 12.—The Motor State Oil & Grease Co., which has succeeded the Callaghan Oil & Grease Co., at Jackson, Mich., announces that it has begun the compounding of motor oils and the manufacture of greases. W. E. Callaghan is president and George Melling is vice president.

For Atmospheric Cooling

The G-R Bentube Section is patented and it is our intention to prosecute all infringements. A suit, charging infringement of our patent No. 1,617,083, has been brought in the U. S. District Court at Wilmington, Delaware.

G-R Bentube Sections

ARE widely used for all types of cooling and condensing service. Their automatic scale-shedding feature, high salvage value, flexible capacity, interchangeability, and long life are some of the many advantages that have made them popular in natural gasoline plants and refineries.

Over 3,000,000 gallons per day capacity now operating.

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Buffalo	New Orleans
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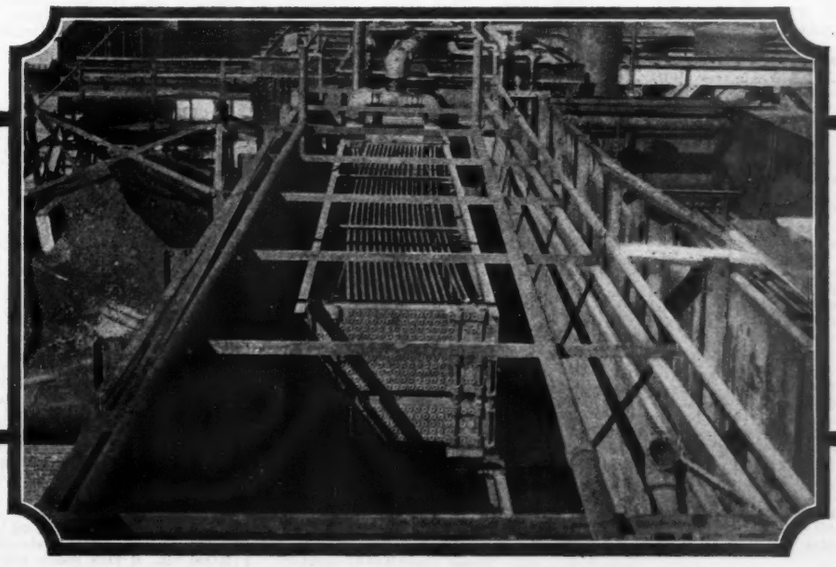
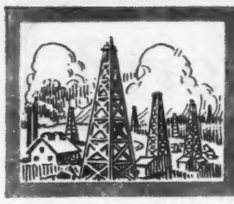




REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	July 15		July 8		July 1	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.05¾	.06¼	.05¾	.06¼	.06	.06¼
56-58 450 endpoint	.05¾	.06¼	.05¾	.06¼	.06	.06¼
*58-60 437 endpoint (U. S. Motor)	.066		.06676		.06705	
*60-62 437 endpoint	†.06	.06½	†.06¼	.06¾	†.06¼	.06¾
*60-62 400 endpoint	†.06¼	.06½	.0725		.07375	
*64-66 375 endpoint	†.06½	.06¾	.0775		.08	
68-70 360 endpoint	.07	.07½	.07¼	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.05½	.06	.05¾	.06¼	.06	.06¼
NORTH TEXAS—						
50-52 450 endpoint	.05¾	.06¼	.05¾	.06¼	.06	.06¼
58-60 450 endpoint	.05¾	.06	.05¾	.06	.05¾	.06
58-60 437 endpoint (U. S. Motor)	.05¾	.06¼	.05¾	.06¼	.05⅞	.06¼
60-62 400 endpoint	.06	.06¼	.06⅛	.06½	.06¼	.06½
64-66 390 endpoint	.06¼	.06½	.06⅜	.06¾	.06½	.06¾
64-66 375 endpoint	.06½	.06¾	.06½	.07	.06¾	.07¼
68-70 360 endpoint	.06¾	.07	.07	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.05½	.06	.05¾	.06¼	.06¼	.06½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.07		.07	.07¼
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.06¾	.07	.07		.07	
PENNSYLVANIA—						
52-54 Naphtha	.07¼		.07¼		.07¼	
54-56 Naphtha	.07½		.07½	.07¾	.07½	.07¾
58-60 Gasoline	.07¾	.08	.08	.08¼	.08	.08¼
60 Gasoline	.08	.08¼	.08	.08½	.08¼	.08½
62 Gasoline	.08¼	.08½	.08¼	.08½	.08½	.08¾
64 Gasoline	.08½	.08¾	.08½	.08¾	.08½	.08¾
68-70 350 endpoint gasoline	.08¾	.09	.08¾	.09	.08¾	.09
CALIFORNIA—						
†58-60 437 endpoint (U. S. Motor) domestic	.07	.07½	.05½	.06½	.07	.07½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.05¾	.06¼	.05¾	.06	.05¾	.06
56-58 450 endpoint	.05¾	.06	.06	.06⅛	.06	.06⅛
58-60 437 endpoint (U. S. Motor)	.06	.06½	.06⅛	.06½	.06⅛	.06½
60-62 400 endpoint	.06¼	.06½	.06¼	.06½	.06⅛	.06½
64-66 375 endpoint	.07	.07¼	.07	.07¼	.07	.07¼
68-70 360 endpoint	.07¼	.07½	.07¼	.07½	.07¼	.07½
64-66 437 endpoint (blend)	.06	.06¼	.06¼	.06½	.06¼	.06½
GULF COAST (Export)—						
58-60 U. S. Motor	.08		.08		.08	
60-62 400 endpoint	.09		.09		.09	
61-63 390 endpoint	.09¼		.09¼		.09¼	
64-66 375 endpoint	.09½		.09½		.09½	

*Weighted average prices July 15, 7 and June 30 as reported by representative refiners. Sales to jobbers only. †No sales reported. Prices show general market.

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	July 15		July 8		July 1	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04¼	.04¾	.05¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04¼	.04½	.05	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.04¼		.04½	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾	.04	.04	.04¼	.04½	.04¾
Grade C, 80-92, 375 e.p., rec. 78%	.03¾		.04	.04¼	.04½	
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04½	.04¾	.05¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04¼	.04½	.05	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04		.04¼		.04½	.04¾
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾	.04	.04	.04¼	.04½	.04¾
Grade C, 80-92, 375 e.p., rec. 78%	.03¾		.04	.04¼	.04½	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.04½	.04¾	.04¾	.05	.05½	.05¾
Grade BB, 84-92, 375 e.p., rec. 85%	.04¼	.04½	.04½	.04¾	.04¾	.05
Grade C, 80-92, 375 e.p., rec. 78%	.04	.04¼	.04½		.04¾	.05
CALIFORNIA—						
75-78 375-390 endpoint	.06¼	.06¾	.06¼	.06¾	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.04¼		.04¾		.05¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04		.04¼		.05	
Grade BB, 84-92, 375 e.p., rec. 85%	.03¾		.04¼		.04½	

BURNING OIL

	July 15		July 8		July 1	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.03¼	.03¾	.03¼	.03¾	.03⅝	.04
42-44 water white kerosene	.03½	.04	.03½	.04	.04	.04¼
NORTH TEXAS—						
41-43 water white kerosene	.03⅛	.03¼	.03¼	.03½	.03½	.03¾
40-41 water white kerosene	.03	.03⅛	.03	.03¼	.03¼	.03½
***NORTH LOUISIANA—**						
41-43 water white kerosene	.04	.04¼	.04¼		.04½	
***ARKANSAS—**						
41-43 water white kerosene	.04	.04¼	.04¼		.04½	
PENNSYLVANIA—						
43 Kerosene prime white	.04¼		.04¼		.04⅜	.04¾
45 Kerosene water white	.04⅝		.04⅝	.04¾	.04¾	
46 Kerosene water white	.04¾	.05	.04¾	.05¼	.05	.05¼
300 Mineral Seal	.05¾	.06	.05¾	.06	.06	.06¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.04½	.04	.04½	.04	.04½
Engine distillate, 43-44, 445 endpoint	.06	.06½	.06	.06½	.06	.06½
Engine distillate, 42-44, 480 endpoint	.05	.05½	.05	.05½	.05	.05½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.03¼	.03½	.03¼	.03½	.03½	.03¾
42-44 water white kerosene	.03½	.03¾	.03½	.03¾	.03¾	.04
GULF COAST (Export)—						
41-43 prime white	.06		.06		.06	
41-43 water white	.07		.07		.07	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	July 15		July 8		July 1	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.45	.50	.47½	.52½	.47½	.52½
18-22 Fuel Oil, per bbl.	.47½	.50	.50	.55	.50	.55
20-22 Fuel Oil, per bbl.	.50	.57½	.52½	.60	.55	.60
22-26 Fuel Oil, per bbl.	.55	.60	.55	.65	.57½	.65
26-30 Fuel Oil, per bbl.	.70	.75	.75	.80	.75	.80
28-30 Fuel Oil, per bbl.	.80	.85	.80	.85	.82½	.87½
32-36 Gas Oil (industrial)	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
32-36 Gas Oil (straw color)	.02¼	.02½	.02¼	.02½	.02¼	.02½
36-38 Distillate	.02⅝	.02¾	.02⅝	.02¾	.02¾	.03
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02⅞	.03
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.40	.50	.40	.50	.45	.55
24-26 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
32-36 Gas Oil (industrial)	.02	.02⅛	.02	.02⅛	.02	.02⅛
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.75	.80	.70	.75	.70	.75
30-32 Gas Oil	.02⅜	.02¾	.02⅜	.02¾	.02⅜	.02¾
***ARKANSAS—**						
33-36 Distillate	.02¾	.03	.02¾	.03	.02¾	.03
30-32 Gas Oil	.02⅜	.02½	.02⅝	.02¾	.02⅝	.02¾
16-22 Refinery Fuel Oil, per bbl.	.60	.70	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.75	.80	.80	.90	.80	.90
Bunker C Fuel (small lots)	1.05	1.10	1.05	1.10	1.05	1.10
PENNSYLVANIA—						
30-34 Fuel Oil	.03⅛	.03¼	.03¼	.03½	.03½	.03⅝
36-40 Fuel Oil	.03¼	.03½	.03½	.03¾	.03¾	.04
CALIFORNIA—						
33-36 Distillate	.02½	.03	.02½	.03	.02½	.03
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-20 Fuel Oil, Bunker (at tidewater)	.60	.65	.60	.65	.60	.65
15-20 Fuel Oil (cargo lots), per bbl.	.55	.65	.55	.65	.55	.65
27 plus Diesel, per bbl.	.80	.90	.80	.90	.80	.90
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.57½	.65	.60	.65	.60	.65
18-22 Fuel Oil, per bbl.	.45	.50	.50	.55	.50	.55
28-30 Fuel Oil, per bbl. (zero)	.77½	.82½	.82½	.87½	.82½	.87½
32-36 Gas Oil (zero)	.02⅜	.02⅝	.02⅜	.02⅝	.02¼	.02⅜
32-36 Gas Oil (industrial)	.02	.02⅛	.02⅛	.02¼	.02⅛	.02¼
38-40 Straw Distillate	.02¾	.03	.02¾	.03	.02¾	.03

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	July 15		July 8		July 1	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.08	.08½	.08	.08½	.08	.08½
150 vis., 4 color, 20-25 cold test	.07½	.08	.07½	.08	.07½	.08
180 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
200 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 4 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 5 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.08	.11	.08	.11	.08	.11
600, steam refined, dark green	.06	.08	.06	.08	.06	.08
190-200 vis., D color, Bright Stock	.37		.37		.37	
150-160 vis., D color, Bright Stock	.30	.32	.30	.32	.32	
*150-160 vis., D color, Bright Stock	.28	.30	.28	.30	.30	.32
150-160 vis., E color, Bright Stock	.26	.28	.26	.28	.28	.30
Waxes:						
124-126 White Crude Scale Wax	.02	.02½	.02	.02⅛	.02	.02⅛
PENNSYLVANIA—						
34 Neutral	.05¾	.06½	.05¾	.06½	.06	.06½
34 Sundebloom	.05¾	.06	.05¾	.06	.06	.06¼
36 Miners' Neutral	.06	.06¼	.06	.06¼	.06¼	.06½
150, 3 color	.13	.14	.13	.14	.13	.14
180, 3 color	.17	.18	.17	.18	.18	.19
200, 3 color	.20	.23	.20	.23	.21	.23
220, 3 color	.23	.24	.23	.24	.23	.25
600, steam refined	.10	.11	.10	.11	.12	.13
635, steam refined	.14	.17	.14	.17	.15	.17
650, steam refined	.17	.19	.17	.19	.18	.20
600, Pennsylvania Flash	.21		.21		.22	
630, Pennsylvania Flash	.28	.29	.28	.29	.28½	.30
600, E filtered	.17½	.18	.17½	.18	.19	.20
600, D filtered	.20	.23	.20	.23	.23	.26
Pennsylvania Bright Stocks	.25	.27	.25	.27	.26	.28
*122-124 White Crude Scale Wax	.02¼		.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	
GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06½	.06¾	.06½	.06¾	.06½	.06¾
200 vis., 3 color, pale oil	.09½		.09½		.09½	
300 vis., 3 color, pale oil	.10¾		.10¾		.10¾	
500 vis., 3½ color, pale oil	.12	.12¾	.12	.12¾	.12	.12¾
750 vis., 3½ color, pale oil	.13½		.13½		.13½	
1,200 vis., 3½ color, pale oil	.16		.16		.16	
2,000 vis., 6 plus color, red oil	.17		.17		.17	
200 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09

*High cold test. All bright stock prices are for domestic movement.

*At New York.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

300 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼
500 vis., 5-6 color, red oil	.11¼		.11¼		.11¼	
750 vis., 5-6 color, red oil	.12¾	.13	.12¾	.13	.12¾	.13
1,200 vis., 5-6 color, red oil	.15		.15		.15	
2,000 vis., 4 color, pale oil	.17		.17		.17	
200 vis., 2½ color, filtered oil	.11	.12	.11	.12	.11	.12
300 vis., 2½ color, filtered oil	.12	.13	.12	.13	.12	.13
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13¼
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	July 15		July 8		July 1	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.08½	.10	.09	.10	.09	.10
Kerosene, water white, 41-43	.07	.07¼	.07	.07¼	.07	.07¼
*Fuel Oil, Bunker "C," 41-43	1.15		1.15		1.15	
Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.02¾		.02¾		.02¾	
125-127 a.m.p., per lb.	.03⅛		.03¼		.03¼	
130-132 a.m.p., per lb.	.03½		.03¾		.03¾	
133-135 a.m.p., per lb.	.04⅜		.04½		.04½	
135-137 a.m.p., per lb.	.04⅝		.04⅝		.04⅝	
Petrolatum in barrels, in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03¼		.03¼		.03¼	
Extra Amber	.03⅜		.03⅜		.03¼	
Cream	.06		.06⅛		.06⅛	
Lily White	.06¼		.06¼		.06¼	
Snow White	.08		.08⅛		.08⅛	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	July 15		July 8		July 1	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.18	.19	.21		.22	
635, steam refined	.20	.21	.23		.24	
650, steam refined	.24	.25	.27		.28	
600, Pennsylvania Flash	.30		.33		.33	
630, Pennsylvania Flash	.33		.36		.36	
600, Warren E	.28		.31		.32	
600, Oil City E	.27		.30		.31	
Light 140-150 Bright Stocks	.33		.35		.37	
Dark 140-150 Bright Stocks	.31		.33		.35	

LOS ANGELES EXPORT PRICES

	July 15		July 8		July 1	
Kerosene, water white	.03¾	.04½	.03¾	.04½	.03¾	.04½
*U. S. Motor Gasoline, 53-55, 437 e.p.	.06½	.06¾	.06½	.06¾	.06½	.06¾

*Prices on coastwise shipments.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posted all oil 40 gravity and above at $1.43 on April 10.

Corsicana heavy (April 10, 1930)..... $ .80

Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

In Noel-McConnell district Prairie Oil & Gas Co. posted April 10, below 30 degrees, 75½ cents, with 5-cent differential upward to 34-34.9, $1.00½, and then a 3-cent differential upward to 44 and above at $1.35½.

WEST TEXAS

Iatan*.....Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Ector .....See gravity table, Column 3

Howard and Glasscock.....See gravity table, Column 9

Chalk† (April 10, 1930) ..... $ .75

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (April 11, 1930) ..... $ .90

Smackover, 24 gravity and above (April 11, 1930) 1.05

Carterville, Sarepta and Cotton Valley, below 36 gravity (April 11, 1930)... .85

Bellevue (April 11, 1930) 1.15

Urania (April 11, 1930) ..... .95

East El Dorado (April 11, 1930) ..... .90

Other fields.....See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Magnolia Petroleum Co.

GULF COAST

Grade A (April 10, 1930)* $1.15

Grade B, 25 degrees and upward .....See gravity table

Jennings, La. (April 10, 1930)†..... 1.10

Refugio (light) .....Same as Grade B

Refugio (heavy) (April 10, 1930)‖ .... .85

Sorrento (April 10, 1930)‡ 1.10

Markham (April 10, 1930)§..... .85

High Island (April 10, 1930)¶..... .95

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Pipe Line Co. ¶Posted by Gulf Pipe Line Co. ‖Humble Oil & Refining Co. and Gulf Coast Pipe Line Co.

(Continued on Page 146)

CRUDE OIL GRAVITY TABLE

Gravity—	1 Kan.	2 N. C. Texas, No. La., Arkansas	3 Crane, Upton, Ector, Crockett, Winkler, Pecos, Mitchell (West Texas); Lea, N. Mex.	4 Wheeler County (Texas Panhandle)	5 Gray County (Texas Panhandle)	6 Carson and Hutchinson (Texas Panhandle)	7 Salt Creek, Wyo.	8 Stephens, Ark.	9 Howard-Glasscock (West Texas)	10 Grade B Gulf Coast and Refugio, Texas
Below 25	.75	.72	.65	....	....	....	....	....	.65	1.05
25 to 25.9	.80	.77	.68	....	....	....	....	....	.68	1.05
26 to 26.9	.85	.82	.71	....	....	....	....	....	.71	1.04
27 to 27.9	.90	.87	.74	....	....	....	....	.76	.74	1.03
28 to 28.9	.95	.92	.77	....	.75½	....	....	.81	.76	1.12
29 to 29.9	1.00	.97	.80	.75½	.80½	....	1.00	.86	.78	1.11
30 to 30.9	1.05	1.02	.83	.80½	.85½	....	1.05	.91	.80	1.10
31 to 31.9	1.10	1.07	.86	.85½	.90½	.77½	1.10	.96	.82	1.21
32 to 32.9	1.15	1.12	.89	.90½	.95½	.82½	1.15	1.01	.84	1.24
33 to 33.9	1.18½	1.17	.92	.95½	1.00½	.87½	1.18½	....	.86	1.27
34 to 34.9	1.22	1.22	.95	1.00½	1.05½	.92½	1.22	....	.88	1.30
35 to 35.9	1.25½	1.25½	.98	1.04	1.09	.96	1.25½	....	.90	1.33
36 to 36.9	1.29	1.29	1.01	1.07½	1.12½	.99½	1.29	....	.93	1.36
37 to 37.9	1.32½	1.32½	....	1.11	1.16	1.03	1.32½	....	....	1.39
38 to 38.9	1.36	1.36	....	1.14½	1.19½	1.06½	....	....	....	1.42
39 to 39.9	1.39½	1.39½	....	1.18	1.23	1.10	....	....	....	1.44
40 to 40.9	1.43	1.43	....	1.21½	1.26½	1.13½	....	....	....	1.46
41 to 41.9	1.46½	1.46½	....	1.25	1.30	1.17	....	....	....	1.48
42 to 42.9	1.50	1.50	....	1.28½	1.33½	1.20½	....	....	....	1.50
43 to 43.9	1.53½	1.53½	....	1.32	1.37	1.24	....	....	....	1.53
44 and above	1.57	1.57	....	1.35½	1.40½	1.27½	....	....	....	1.54

Column 1, Note—Above prices posted April 10, 1930, by Carter Oil Co. (beginning at 25 degrees and below), and by the Prairie Oil & Gas Co. and other purchasers beginning at 24 degrees and below, the Magnolia Petroleum alone excepted. The Magnolia on April 10 posted the following prices: Below 26 gravity, 70 cents 26-26.9, 76 cents; 27-27.9, 81 cents; 28-28.9, 88 cents; 29-29.9, 95 cents; 30-30.9, $1.02. From 31 up and including 44 degrees and above Magnolia followed Carter price schedule, but made its whole schedule apply to its gravity purchases in Kansas, Oklahoma and North Central Texas alike.

Column 2—Humble Oil & Refining Co. posted above prices April 10, 1930, and was followed by all other companies in Texas except Magnolia which posted a different price schedule than Humble up to 33.9 degrees (see note in paragraph just above). The Texas Company posted North Louisiana and Arkansas on April 10, and Standard of Louisiana posted on April 11 followed by other companies, but Magnolia's price schedule begins with below 28 gravity at 87 cents. North Central Texas includes North Texas, Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona, Moran, and Corsicana light. Arkansas and Louisiana pools include Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer, El Dorado and Rainbow.

Column 3—Posted by Humble Oil & Refining Co. April 10, 1930, and Magnolia Petroleum Co. April 10, 1930.

Column 4, 5 and 6—Humble Oil & Refining Co., Prairie Oil & Gas Co., Magnolia Petroleum Co., April 10, 1930.

Column 7—Mid-West Refining Co., April 11. All crude over 37 gravity $1.32½.

Column 8—Louisiana Oil & Refining Co., April 11.

Column 10—Humble Oil & Refining Co., April 10. Magnolia Petroleum Co. posted below 25 gravity 65 cents with 3-cent differential upward to and including 36 and above which was posted at $1.01.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective March 11, 1930)

Gravity—	1 Signal Hill, Seal Beach, Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Huntington Beach, Signal Hill, Inglewood	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Helridge, Buena Vista Hills	4 Montebello	5 Santa Fe Springs (June 14, 1930)	6 Santa Maria, Coalinga	7 Wheeler Ridge, Fruitvale	8 Orcutt, Ventura, Rincon	9 Ventura Avenue (Nov. 8)	10 Elwood Terrace	11 Athens, Rosecrans, Dominguez
14 to 14.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
15 to 15.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
16 to 16.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
17 to 17.9	.70	.70	.55	.70	....	.55	.55	.55	.70	....	....
18 to 18.9	.76	.76	.62	.71	....	.62	.62	.65	.76	....	....
19 to 19.9	.82	.82	.70	.77	....	.70	.70	.70	.82	....	....
20 to 20.9	.88	.87	.78	.83	....	.78	.78	.78	.88	....	....
21 to 21.9	.94	.93	.86	.90	.92	.86	.86	.90	.91	....	....
22 to 22.9	1.00	.98	.94	.97	.95	.94	.94	.95	.94	....	....
23 to 23.9	1.07	....	1.02	1.05	1.01	1.02	1.02	1.02	1.00	....	....
24 to 24.9	1.14	....	1.09	1.11	1.07	1.07	1.07	1.10	1.07	....	1.14
25 to 25.9	1.21	....	1.16	1.17	1.13	1.12	1.12	1.18	1.14	....	1.19
26 to 26.9	1.28	....	1.23	1.23	1.19	1.17	1.17	1.26	1.21	....	1.24
27 to 27.9	1.35	....	1.30	1.29	1.25	1.23	1.22	....	1.28	....	1.29
28 to 28.9	1.42	....	1.35	1.35	1.31	1.27	....	....	1.35	....	1.34
29 to 29.9	1.46	....	1.41	1.38	1.37	1.31	....	....	1.39	....	1.39
30 to 30.9	1.50	....	1.47	1.41	1.43	1.35	....	....	1.43	....	1.45
31 to 31.9	1.55	....	1.53	....	1.49	1.39	....	....	1.48	....	1.51
32 to 32.9	1.60	....	1.59	....	1.55	1.43	....	....	1.53	....	1.57
33 to 33.9	1.65	....	1.65	....	1.60	1.47	....	....	1.59	....	1.64
34 to 34.9	1.70	....	....	....	1.65	1.51	....	....	1.65	1.32	1.71
35 to 35.9	1.75	....	....	....	1.70	1.55	....	....	1.71	1.39	1.78
36 to 36.9	1.80	....	....	....	1.75	....	....	....	....	1.46	1.84
37 to 37.9	1.85	....	....	....	1.80	....	....	....	....	1.53	1.90
38 to 38.9	1.90	....	....	....	1.85	....	....	....	....	1.60	1.96
39 to 39.9	....	....	....	....	1.90	....	....	....	....	1.66	2.02
40 to 40.9	....	....	....	....	....	....	....	....	....	1.72	2.08
41 to 41.9	....	....	....	....	....	....	....	....	....	1.78	2.14
42 to 42.9	....	....	....	....	....	....	....	....	....	1.84	2.20

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain, 11 to 13.9 gravity, 50 cents; 14 gravity and above, 55 cents, effective March 11. On March 11, the Union Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 50 cents.

Column 1——Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 13.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 50 cents.

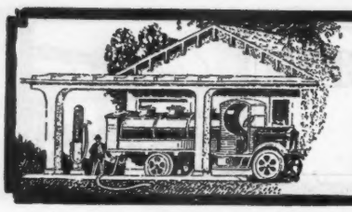
Column 5—Price change posted by Standard of California June 14.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Column 10—Standard posted price f.o.b. tanker.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns July 15.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago†	18.0	19.0	3.0	13 0
Decatur, Ill.	18.2	19.2	3.0	13.1
E. St. Louis	17.4	18.4	3.0	12.2
Joliet	18.4	19.4	3 0	13.3
Peoria	18.2	19.2	3.0	13.1
Quincy	18.2	19.2	3.0	12.9
Davenport, Ia.	18.5	19.5	3 0	13.3
Des Moines	18.5	19.5	3.0	13.3
Keokuk	18.5	19.5	3.0	13.3
Sioux City	18.1	19.1	3.0	12.9
Duluth, Minn.	19 5	20.5	3.0	13.9
Mankato	19.1	20.1	3.0	13.7
Minneapolis	19.2	20.2	3.0	13.9
LaCrosse, Wis.	18.2	19.2	2.0	14.0
Milwaukee	17.1	18 1	2.0	12.9
Madison	17.3	18.3	3.0	13.1
Detroit, Mich.	18.8	19.8	3.0	14.7
Grand Rapids	18.7	19.7	3.0	14.6
Saginaw	18.9	19.9	3 0	14.8
Evansville, Ind.	19.0	20.0	4.0	14.0
Fort Wayne	19.4	20.4	4.0	14.4
Indianapolis	19.2	20.2	4.0	14.2
South Bend	19.4	20.4	4.0	14.4
Fargo, N. D.	20.9	21.9	3.0	15.9
Huron, S. D.	20.3	21.3	4.0	14.7
Sioux Falls	19.1	20.1	4.0	14.4
K. C., Mo.*	17.9	18.9	3.0	11.6
Springfield*	17 8	18.8	3.0	12.5
St. Louis*	16.9	17.9	2.5	12.3
St. Joseph	17.5	18.6	2.0	12.2
Wichita, Kans.	16.8	15.8	3.0	11.8
Bartlesville, Ok.	17.5	20.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective June 3, discounts on Q.D.A. in Chicago district 4 cents off service station price on purchases of 500 gallons or more per month and 5 cents on purchases of 1,000 gallons or more per month.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents; 75,000 gallons or more, 4½ cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	10.0
V. M. & P. naphtha	16.7	12.0
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	14.0	18 0	4.0	12.0
Fort Worth	14.0	17.0	4.0	11.0
Houston	15.0	19.0	4.0	11.0
San Antonio	14.0	18.0	4.0	11.0
El Paso	16.0	20.0	4.0	13.0
Texarkana	14 0	15.0	4.0	12.0
Muskogee*	16.0	19.0	4.0	9.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa*	16.0	20.0	4.0	10.0
Ft. Smith, Ark.	17.0	18.0	5.0	12.0
Little Rock	13.0	19.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	16 0	19.0	4.0	15.5
Pueblo	12 0	20.0	4 0	15.5
Grand Junction	21.5	24.5	4 0	19 0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15 5
Butte, Mont.	24.5	28 0	5.0	20 0
Helena	24.5	27.5	5.0	20.0
Salt Lake, Utah	20.0	22.0	3.5	17.0
Aubu'que, N. M.	16.0	20 0	5 0	15 0
Boise, Idaho	21.5	24 5	5.0	19.0
Twin Falls	23.5	27.5	5.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	16.0	*22.0	...	13.0
Philadelphia	16.0	*22.0	...	13.0
Scranton	16.0	*22.0	...	13 0
Allentown	16.0	*22.0	...	13.0
Altoona	16.0	*22.0	...	13.0
Erie	15.0	*19.0	...	13.0
Dover, Del.	19.0	21 0	3.0	13.0
Wilmington	19.0	21.0	3.0	13.0
Springf'd, Mass.	17.5	19.5	2.0	12.5
Worcester	17.3	19.3	2.0	12.3
Boston	16.5	18.5	2 0	11.5
Providence, R.I.	16.7	18.7	2.0	11.7
Hartford, Conn.	17.5	19.5	2.0	12.5
New Haven	17.6	19.6	2.0	12.6

*Includes tax of 4 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	17 6	19.6	2.0	15.6
New York*	16.3	18.3	2.0	14.3
Buffalo	17.8	19.8	2.0	14.8
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.8	20.8	2.0	14.8
Boston, Mass.	16.5	18.5	2.0	13.5
Augusta, Me.	19.8	21.8	4.0	14.8
Manch't'r, N. H.	19.4	21.4	4.0	14.0
Burlington, Vt.	19.6	21.6	4.0	15.3

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.	19 0	21 0	6.0	15.5
Augusta	22 0	24.0	6 0	15.5
Macon	20 0	22.0	6 0	14 0
Savannah	20 0	22.0	6 0	14 0
Birm'ham, Ala.	18 0	20 0	5.0	14.5
Mobile	18 0	18 0	4 0	13 5
Montgomery	19 0	21 0	4.0	15 0
Clarksv'le, Miss.	19 0	21 0	5 0	12 5
Jackson	19.0	21 0	5.0	13.0
Natchez	19 0	21 0	5.0	13 0
Gulfport	20.0	22 5	5 0	13 0
Vicksburg	19 0	21 0	5.0	13.0
Jack'ville, Fla.	20.0	21 0	6 0	14 0
Miami	21 0	23.0	6 0	14 0
Pensacola	18.0	19.0	6 0	13.5
Tampa	20.0	22 0	5 0	13 0
Lexington, Ky.	19 0	20.0	5.0	14.5
Covington	21.0	22.0	5.0	14.5
Louisville	18.0	20.0	5.0	13.0
Ashland	19.0	21.0	5.0	15.0
Catlettsburg	20.0	21.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Birmingham and Mobile state taxes add 1-cent city levy. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12.5
Annapolis, Md.	18.0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10.5
Cumberland	19.0	21.0	4.0	14 0
Wash'gton, D.C.	15.7	17.7	2 0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfolk	18.3	20.3	5.0	11.0
Petersburg	19.3	21.3	5.0	13.3
Roanoke	19 0	20 0	5.0	14 0
Richmond	16.7	18 7	5.0	12.7
Charles'n, W.Va.	18.5	20.5	4.0	12.5
Keyser	19.1	21.1	4.0	14.1
Parkersburg	17.2	19.2	4.0	11 2
Wheeling	18.4	20.4	4.0	12.4
Charlotte, N. C.	20.3	20 3	5 0	14 3
Hickory	20 6	22.6	5 0	14.6
Mt. Airy	20.5	22.5	5 0	14.5
Salisbury	20.7	22.7	5.0	14.5
Charleston, S. C.	19.3	21 3	6.0	12 3
Columbia	21 2	23.2	6 0	14.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline			Kero.
	Wholesale price	Retail price	Incl'ds tax of	tank wagon
Fresno	19.0	17 0	3.0	17.0
San Francisco	19 0	12.0	3 0	15 5
Los Angeles	18 5	16 5	3.0	15 5
Reno, Nev.	24 0	22 0	4 0	19.0
Portland, Ore.	20 5	18.5	4 0	16.5
Seattle, Wash.	19 5	12.5	3 0	16.5
Tacoma	19.5	17 5	3 0	16.5
Spokane	21 5	21 5	3 0	20.5
Phoenix, Ariz.	17.0	20 0	4.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where discount is 1 cent.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	19 25	21.25	4.0	13.25
McCook	29.75	22.75	4.0	14.75
Norfolk	19.75	21.75	4.0	13.75
N. Platte	20.75	22.75	4.0	14.50
Scottsbluff	20.75	22.75	4.0	14.25

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points*	20.0	21.0	4.0	†14.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 16 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.*	14.5	14.5	5.0	12.0
Baton Rouge	16.0	16.0	4.0	14.0
Alexandria†	18.0	18.0	5.0	14.0
Lafayette*	18 0	18 0	5 0	14 0
Lake Charles*	18.0	18 0	5 0	14 0
Shreveport	14.0	18.0	4.0	14.0
Knoxv'le, Tenn.	20.0	22 0	5.0	16.0
Memphis	18.0	20 0	5 0	12 5
Chattanooga	20.0	20.0	5 0	16 0
Nashville	19.0	21.0	5.0	16.0
Bristol	20.0	22.0	5 0	14 0
Lt. Rock, Ark.	17 0	17.0	5.0	13.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in Parish of Rapides.

TANK WAGON CHANGES

Effective July 8 Standard Oil Co. of Kentucky advanced gasoline tank wagon and service station prices 2 cents at Augusta, Ga. Effective July 10 company reduced gasoline tank wagon and service station prices 2 cents at Atlanta, Macon, Birmingham and Montgomery. Company, same date reduced gasoline tank wagon and service station prices 1 cent at Savannah, Jackson, Gulf Port, Miami and Tampa. Company same date reduced gasoline tank wagon and service station prices one-half cent at Natchez and Vicksburg.

Effective July 3, Standard Oil Co. of Louisiana reduced service station price of gasoline 2 cents at Chattanooga, Tenn. Same company effective June 30 advanced gasoline tank wagon and service station prices 2 cents at Lake Charles, La.

Effective June 25 Continental Oil Co.

(Continued on Page 155)

CRUDE CHANGES

On July 11 the Seep Purchasing Agency and the Tide Water Pipe Co. announced a 15-cent reduction in the prices of Pennsylvania grade crude oil.

CRUDE OIL PRICES

(Continued from Page 145)

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

(Effective April 11, 1930)

Hex (Feb. 15, 1930):	
33 gravity and above	$ .87
Under 33 gravity	.65
Dutton Creek (Feb. 15, 1930)	1.25
Rock Creek, Wyo.	1.35
Salt Creek	See gravity table
Big Muddy	1.38
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light	1.55
Mule Creek (May 21, 1929)	1.20
Elk Basin	1.55
Lance Creek	1.60
Poison Spider (March 14, 1927)	1.00
Notches (March 14, 1927)	.65
Rex Lake (February 22)	1.10
Osage	1.60
Lost Soldier (contract, May 22)	1.05
Hamilton Dome (March 14, 1927)	.85
Greybull (February 15, 1930)	1.40
Four Bear (May 21, 1929)	.85
Cat Creek	1.55
Pondera (Montana) (Feb. 15, 1930)	1.80
Sunburst (Montana) (Feb. 15, 1930)	1.65
Torchlight (May 21, 1929)	1.65
Hogback (Feb. 15, 1930)	1.40
Artesia (New Mexico)	1.05
Lea County	See gravity table

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 10, 1930)*	$1.10
Luling (April 10, 1930)	.85
Mirando (April 10, 1930)†	.85
Pettus (April 10, 1930)§	1.40
Salt Flat (April 10, 1930)§	1.10
Thrall‡	...
Lytton Springs (Lockhart)	See gravity table
Somerset (April 10, 1930):	
Below 33 gravity	$1.10
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.19
35 to 35.9 gravity	1.21
36 to 36.9 gravity	1.23
37 to 37.9 gravity	1.25
38 gravity and above	1.27

*Posted by Humble Oil & Refining Co. and Magnolia Petroleum Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. §Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency

(Effective July 11, 1930)

Seep Purchasing Agency withdrew from Bradford and Allegany Fields as a purchaser on May 16.

Penna Grade Oil in National Transit Lines (Pennsylvania)	$2.05
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	2.00
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	1.75
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (Feb. 17, 1930)	1.75
Somerset Oil in Eureka Pipe Line Lines (Kentucky) (April 11, 1930)	1.85
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (April 11, 1930)	1.47
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60
Wayne District Oil in Cumberland Pipe Lines (April 11, 1930)	1.30

Tide Water Pipe Co.

Bradford district (June 17)	$2.25
Allegany district (June 17)	2.25

Pure Oil Co.

Cabin Creek, W. Va. (June 17)	$2.20
Kelly Creek, W. Va. (June 17)	2.15
Bradford Hollow (June 17)	2.15

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective April 11, 1930)

Lima (June 26, 1930)	$1.55
Wooster (June 26, 1930)	1.70
Illinois	1.61
Indiana (June 26, 1930)	1.33
Princeton	1.60
Plymouth	1.33
Waterloo (Nov. 17, 1926)	1.35
Western Kentucky	1.55
Midland, Mich.* (June 5)	1.55
Dundee, Mich. (April 16)§	..... Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich. (April 16)§	..... Same as Mid-Continent gravity scale
Saginaw, Mich. (April 11)†	..... Same as Mid-Continent gravity scale
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (April 18)§	1.41
Oil Springs (Canada) (June 28, 1930)¶	2.00
Petrolia (Canada) (June 28, 1930)¶	1.95

*Posted by Pure Co. †Posted by Sun Oil Co. ‡Posted by Paragon Development Co. §Posted by Stoll Oil Refining Co. ¶Posted by Imperial Oil Co., Ltd. §Posted by Standard of Indiana for boat shipment. Local Refiners posted Mid-Continent prices on April 11.

MEXICAN CRUDE

Panuco*	$ .90

*F.o.b. ship, based on May transactions.

Here, motorists don't just "buy gas" ...they *Select* their motor-fuel... they get THREE-GAS SERVICE!

Keeping pace with motoring developments, Sinclair offers three different gasolines that give three different engine performances. Every motorist can select the gasoline that's just right for his own engine and his own driving habits!

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SINCLAIR REFINING COMPANY, INC.,
45 Nassau Street, New York
Atlanta *Chicago* *Houston* *Kansas City*

Six Months Payments Show Large Gain

Of 38 Companies, 7 Made Smaller Payments, 6 Were Unchanged and 25 Showed an Increase in First Half Year

Payments by 38 oil companies show a large gain in the first six months as compared by the Wall Street Journal with a year ago. The amount paid by these companies was $187,840,590, against $176,866,785 in the first six months of 1929, an increase of $10,973,805. An important reduction was the decline in extra payments by Standard Oil Co. of Indiana which amounted to $3,332,479. This was more than offset by an increase in other Standard Oil Co. payments, notably Standard Oil Co. of New Jersey, whose payments increased $3,758,372. In this oil group, seven showed smaller payments, six were unchanged, and 25 showed an increase during the six months.

The following table compares payments by individual companies:

Oil Companies, Etc.	1930	1929
Standard Oil N. J.	$25,418,968	$21,660,596
Standard Oil Ind.	21,063,233	24,395,712
Standard Oil Calif.	16,057,475	15,742,622
Texas Corp.	14,775,075	12,665,031
Standard Oil N. Y.	13,903,657	13,727,026
Vacuum Oil	10,279,774	10,094,428
Prairie Pipe Line	10,125,000	10,125,000
Shell Union Oil	9,149,436	9,139,055
International Pet.	7,162,044	3,581,022
Imperial Oil	6,622,685	6,605,442
Sinclair Cons. Oil	5,460,008	4,125,000
Ohio Oil Co.	4,800,000	2,400,000
Union Oil of Calif.	4,240,010	3,927,528
Gulf Oil Corp.	3,393,916	3,378,691
Humble Oil	2,974,645	2,964,132
Atlantic Refining	2,683,932	2,333,333
Phillips Pet.	2,669,998	1,803,435
Standard Oil Ky.	2,577,124	2,052,368
Associated Oil	2,290,412	2,290,412
Pure Oil	2,278,777	1,898,981
Barnsdall Corp.	2,258,317	2,026,282
Richfield Oil	1,995,377	1,902,254
Mid-Continent Pet.	1,857,912	1,633,956
Illinois Pipe Line	1,800,000	2,000,000
South Penn Oil	1,500,000	1,200,000
Salt Creek Prod.	1,496,859	2,245,288
Independent Oil	1,362,295	1,322,415
Mountain Prod.	1,345,745	1,766,291
Plymouth Oil	1,050,000	1,050,000
Union Tank Car	1,000,038	778,967
Honolulu Cons. Oil	944,900	944,900
Amerada Corp.	922,075	922,075
Tide Water Oil	876,738	874,795
Sun Oil	708,646	650,000
Standard Oil Ohio	700,000	700,000
Buckeye Pipe Line	400,000	800,000
Warner-Quinlan	348,121	560,653
National Ref.	347,446	579,095
Total	$187,840,590	$176,866,785

Appalachian Gas

A meeting of stockholders of Appalachian Gas Corp. will be held on July 21 at the corporation's offices in New York for the purpose of acting on amendments proposed by the directors to the corporation's certificate of incorporation, which, if adopted, will make 500,000 shares of preferred stock available for issuance from time to time when authorized by the directors.

Pierce Petroleum

Pierce Petroleum Corp. on July 1 retired the 10,500 shares of outstanding 6 per cent preferred stock at 102 and interest from January 1 to June 30, inclusive.

Empire Gas & Fuel

Empire Gas & Fuel Co. declared regular monthly dividends of 54 1-6 cents on 6½ per cent preferred, 53⅓ cents on 7 per cent preferred, 66⅔ cents on 8 per cent preferred and 50 cents on 6 per cent preferred, all payable August 1 to stock of record July 15.

Canadian Eagle Oil

Income account of Canadian Eagle Oil Co., Ltd., for year ended December 31, 1929, follows: (figures in Canadian currency). Trading profit for year 1929, including dividends from investments, interest receivable and other receipts, and after proving a further reserve against fluctuations in value of crude oil and refined products $5,436,416; reserve against investment and loan $1,000,000; net profit $4,436,416; first preference dividends paid and accrued to December 31, 1929; $1,229,646; participating preference dividends payable July 9, 1930, $204,119; ordinary dividends payable July 9, 1930, $1,455,392; balance $1,547,259 brought forward from preceding year $108,068; carried forward $1,655,327.

Shell Transport

Final dividend of 3s declared in May on the £1 par ordinary shares of Shell Transport & Trading Co., Ltd., for the year 1929 is equivalent to $1.453 a share on the American shares. The dividend will be distributed by Chase National Bank, depository, July 28 to stockholders of record July 21.

Union Oil

Statement of Union Oil Co. of California for six months ended June 30, 1930, estimates net income at $5,150,000 after interest, depreciation, depletion and federal taxes, equivalent to $1.20 a share (par $25) on 4,304,453 shares of stock. This compares with $7,000,000 or $1.72 a share on 4,060,000 shares in first half of 1929.

Net income for quarter ended June 30, is estimated at $2,550,000 after above charges, equal to 59 cents a share on 4,304,453 shares comparing with $2,600,000 or 61 cents a share on 4,264,067 shares in preceding quarter and $4,400,000 or $1.08 a share on 4,060,000 shares in June quarter of previous year.

Sales for six months amounted to $44,500,000 an increase of $1,500,000 aver same period of last year.

The quantity of oils sold by Union Oil Co. of California in the first six months this year totaled 19,200,000 bbls., compared with 18,900,000 bbls. in the first half of 1929. Capital outlay approximated $9,000,000, representing mainly expenditures for marketing facilities, additional refinery equipment, field development and acquisition of prospective oil territory at Playa del Rey, Calif.

Midland Gas

Purchase of oil and gas leases to more than 23,000 acres of land in southwestern Pennsylvania, West Virginia and eastern Kentucky by the Midland Natural Gas Co., for in excess of $2,000,000, was announced by John E. Kelly, vice president of the company.

The same company, which is controlled by interests affiliated with E. R. Diggs & Co., New York, investment bankers, last May purchased 16,000 acres of oil and gas property in northern West Virginia and southwestern Pennsylvania. The consideration in that deal was $2,000,000.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Feb. 5	48.13	Apr. 23	53.70
Feb. 12	47.49	Apr. 30	50.23
Feb. 19	45.85	May 7	51.67
Feb. 26	46.71	May 14	49.71
Mar. 5	46.79	May 21	50.98
Mar. 12	48.30	May 28	50.94
Mar. 19	51.00	June 4	46.65
Mar. 26	51.55	June 11	43.41
Apr. 2	53.26	June 18	42.37
Apr. 9	52.04	June 25	44.12
Apr. 16	53.39	July 2	44.11

SHUT DOWN REFINERY

The Amarillo Producers & Refiners Corp. is preparing to shut down its skimming plant at Pyote, Tex. The plant has a capacity of 2,500 bbls. daily.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 9 Close	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
⅝	⅛	1,300	⅛	⅛	⅛	Amer. Con. Oilfields		$11,018.000	$5	.....	.....	2⅞	.55	1½	.53	72c	⅛
4½	1½	1,200	2⅛	2⅛	2⅛	Amer. Maracaibo	(sh)	700.000	N.P.	.....	.....	7½	2¾	9½	3⅛	8⅝	1⅛
1⅜	1	200	1¼	1¼	1¼	Argo Oil	(sh)	683.971	$10	.....	.....	2¾	1	4½	2¼	5	1½
21	17	100	17	17	17	British American (new, C.W.I.)		$1,311.321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅞
2¾	¾	300	1⅜	1¼	1¼	Carib. Syndicate		$131.250	25c	.....	.....	28¼	15½	4½	3⅞	4⅞	1
44¼	24⅛	14,600	26½	25⅝	26½	Cities Service	(sh)	24,290.359	N.P.	30cA†	1- 2-30	58¾	40¼	90⅞	54	68⅛	20
93⅞	88	200	88¾	88⅛	88¾	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
¾	¼	500	5/16	5/16	5/16	Columbia Syndicate		$2.000.000	$1	.....	.....	3⅞	1⅛	3¼	.76	2	⅛
5⅞	3½	100	3¾	3¾	3¾	Cons. Royalty		$5.000.000	$10	15cQ	10-25-29	9¾	6⅜	8⅞	6¼	11⅛	2½
7⅝	5½	1,200	6	5⅞	5⅞	Creole Petroleum E	(sh)	5,977.873	N.P.	.....	.....	14⅞	9½	17½	9½	11¾	5⅝
1	¼	600	½	¼	¼	Crown Central	(sh)	587.000	N.P.	.....	.....	3	.50	3¼	.76	2½	⅛
21¾	12	200	13½	12⅝	13½	Darby Petroleum	(sh)	1,019.392	N.P.	25cQ	1-15-30	12	4	33½	3¼	26	6½
11	4½	100	6½	6½	6½	Derby Oil & Refining	(sh)	500.000	N.P.	.....	.....	2½	74	2¼	1	11	2
60	30	50	44	44	44	Derby Oil & Refining pfd		$48.500	N.P.	.....	.....	16¾	4	21⅛	7½	44	20⅝
166⅞	117⅛	1,500	122½	119	121¼	Gulf Oil Corp.	(sh)	4,504.921	$25	37½cQ	1- 1-30	118	86¼	165	101⅛	209	115
1¾	¾	2,800	⅞	⅞	⅞	Intercontinental Pet.		$5,682.000	$5	.....	.....	2½	.80	3⅜	1	2⅞	⅜
3	1⅝	100	1⅝	1⅝	1⅝	Kirby Petroleum	(sh)	750.000	N.P.	.....	.....	2¼	1⅛	3	1¼	3⅝	1¼
4¾	1⅛	800	1¾	1⅝	1⅝	Leonard Oil & Dev.		$50.000.000	$25	.....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
29	18⅝	100	23⅜	23⅜	23⅜	Lion Oil & Refining	(sh)	250.000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
55⅛	34⅛	600	37½	36½	36½	Lone Star Gas	(sh)	5,000.000	N.P.	20cQ	12-31-29	59⅜	37	69⅛	48½	67⅞	28
½	⅛	400	¼	¼	¼	Magdalena Syndicate	(sh)	850.000	$1	.....	.....	2⅞	.80	1⅞	.50	1¼	¼
16	12	100	12½	12½	12½	Margay Oils		$160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
7½	2	200	3	3	3	Mexico-Ohio Oil		.....	....	.....	.....	12⅛	5	8	2¾	6⅜	2½
¾	⅜	200	⅜	⅜	⅜	Mountain & Gulf		$4.000.000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	¼
12⅛	8	700	8½	8½	8½	Mountain Producers		$1.682.182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
3½	2⅜	200	2½	2½	2½	New Bradford Oil		$1,095.291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2¼
7¼	3⅛	100	3⅛	3⅛	3⅛	New Mex. & Arizona		$1,000.000	$1	.....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
11¼	6	200	6¾	6¾	6¾	North Central Texas	(sh)	400.000	N.P.	15cQ	12- 2-29	12¾	9½	14¼	8½	18½	6¼
2½	½	900	⅞	¾	⅞	Pandem	(sh)	489.875	N.P.	.....	.....	9⅜	3¼	6	2⅛	3½	½
4⅜	1⅞	200	2	2	2	Pantapec Oil	(sh)	1,506.000	N.P.	.....	.....	12⅛	7	15⅝	8½	10¼	1⅞
..	..	No sales.				Pennok Oil		$150.000	N.P.	.....	.....	13½	5½	7¾	4⅞	7¾	4⅜
10½	8⅛	100	8⅛	8⅛	8⅛	Red Bank Oil	(sh)	250.000	N.P.	.....	.....	24⅜	7	18	4⅞	16	9⅝
5⅜	2⅛	200	3¾	3¾	3¾	Reiter-Foster	(sh)	388.584	N.P.	10cQ	12- 9-29	15½	3½	12⅞	4⅛	8½	1⅜
8⅝	3⅝	100	4⅛	4⅛	4⅛	Ryan Consolidated	(sh)	500.000	N.P.	.....	.....	7	4½	12	4⅛	11	3
2½	1⅜	100	1¾	1¾	1¾	Salt Creek Consolidated	(sh)	1,286.300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅞
15¼	8¼	200	10½	10½	10½	Salt Creek Producers	(sh)	1,496.859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
1	½	100	½	½	½	Savoy Oil		$750.000	$5	.....	.....	7	1¼	3½	1	2½	⅛
..	..	No sales.				Transcontinental pfd		.....	....	.....	.....	..	..	..	..	..	..
4½	2	200	2	2	2	Venezuelan Petroleum	(sh)	755.090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4¾	6½	1⅜
5	2	600	4	4	4	Woodley Petroleum		$500.000	$1	.....	.....	7	4¾	8¼	4⅞	9½	2
2½	½	200	1⅛	1⅛	1⅛	Y Oil & Gas (new)		$100,000	N.P.	.....	.....	6	1¾	8⅜	2⅛	2⅞	⅛

*Including one-half per cent monthly in stock. †Payable monthly and a monthly stock dividend of one-half per cent. x Ex-dividend.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 9 Close	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
18½	12¼	400	18½	18⅜	18⅜	Anglo-American Oil (vot. C.O.D.)		£4.192.635	£1	.36⅞	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
1	⅝	100	⅝	⅝	⅝	Atlantic Lobos		.....	.....	.....	.....	..	..	..	..	..	..
25	14	100	20	20	20	Borne Scrymser		$1.000.000	$25	$1SA	10-15-29	69	50	56½	44½	46½	25
69	55¼	100	55¼	55¼	55¼	Buckeye Pipe Line		$10.000.000	$50	$1Q	12-14-29	60	45	76	53	74¼	55
184⅞	140⅛	100	148	148	148	Chesebrough Mfg.		$3.000.000	$25	1Q*	12-30-29	126	76½	161	117	210	130
17¾	10	400	10	10	10	Continental Oil (V.T.C.)		$36.057.840	$10	.....	12-15-27	22⅝	16¼	23	16	29	10
65¾	35	100	35	35	35	Cumberland Pipe Line		$1.500.000	$50	$1Q	12-15-29	137	89	114	67	75⅜	40
54⅜	41	100	41	41	41	Eureka Pipe Line		$5.000.000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
7	2½	100	4	4	4	Galena Oil Corp.		$16.000.000	$100	.....	.....	13½	3½	13	4¼	6½	3
119	78	300	89	87⅛	89	Humble Oil & Refining		$74.103.300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128·	74⅛
311	303	50	303	303	303	Illinois Pipe Line		$20.000.000	$100	$10SA	12-16-29	182	123¾	290½	176½	340½	260
30	18⅛	500	20½	19⅞	20⅛	Imperial Oil of Canada (new)	(sh)	26.421.768	N.P.	12½cQ	12- 2-29	64¾	37¾	104	56¾	41	22
41	31⅞	400	32¼	31⅞	32¼	Indiana Pipe Line		$3.000.000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅜	41⅞	26
24	17⅞	1,800	18½	18	18½	International Pet.	(sh)	14.247.088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	15⅛	700	17⅛	17	17	National Transit		$6.362.500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
21⅜	10½	100	13½	13½	13½	New York Transit (new)		$1.000.000	$10	40cQ†	1-15-30	44½	31¼	75	38½	17½	10
54	34½	400	39	35½	35½	Northern Pipe Line		$2.000.000	$50	$2SA	1- 2-30	100	70	69	56½	63	41
76⅜	62⅛	800	66	65⅝	66	Ohio Oil		$60.000.000	$25	5cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
32	17	500	18	17	18	Penn Mex. Fuel		$10.000.000	$25	50cQ	12-14-29	39	12	84	28	44½	20
33	15	200	15	15	15	Solar Refining		$4.000.000	$25	$1.25SA	12-20-29	..	..	..	..	50	29
20⅞	13	100	16	16	16	Southern Pipe Line		$1.000.000	$10	50cQ	.....	27¼	15½	19	15	22½	13
45⅞	35	1,000	38	36⅛	36⅛	South Penn Oil (new)		$30.000.000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
65	35	100	45¼	45¼	45¼	Southwest Pa. Pipe Lines		$1.750.000	$50	$1Q	1- 10-29	83	55½	102	70	70	60
59⅞	47⅝	3,200	50	49¾	49⅞	Standard Oil of Indiana		$348.175.069	$25	62½cQ‡	12-16-29	81½	64¾	95⅞	70⅞	63	45
40½	30⅛	1,600	31⅞	31½	31½	Standard Oil of Kentucky		$25.654.516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
48⅞	44⅛	100	45⅛	45⅛	45⅛	Standard Oil of Nebraska		$4.649.225	$25	62½cQ‡	12-20-29	49½	40	54⅞	39⅞	50¼	40
108½	77	100	78	78	78	Standard Oil of Ohio		$14.000.000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
10	7	100	7	7	7	Swan-Finch Co.		$861.466	$25	.....	12- 2-29	21	14½	23½	16	18	10
97⅞	76¼	1,100	83⅞	82	83⅞	Vacuum Oil Co.		$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

*Plus 50 cents extra. †Plus 10 cents extra. ‡Plus 25 cents extra. x Ex-dividend.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended July 9 Close	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
31½	18	1,800	22⅞	22½	22⅞	Amerada Corp.	(sh)	922.075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27½	42⅝	17½
37	15¼	600	19	18⅜	19	American Republic Corp.	(sh)	209.180	N.P.	.....	3-20-29	82½	35⅛	85	51⅛	64⅜	12½
51	32½	100	51	51	51	Associated Oil		$57.260.300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34½
51⅜	30⅛	5,800	35¾	35⅛	35⅛	Atlantic Refining		$66.763.775	$25	25cQ	12-16-29	131⅜	104	66⅜	50	77⅞	30
34	20½	800	22¾	22½	22½	Barnsdall Corp.		$56.546.600	$25	50cQ	12- 7-29	35½	20¾	53	20	49⅛	20
30½	18⅜	3,800	20¼	19⅜	20¼	Continental Oil of Delaware	(sh)	4,741.554	N.P.	.....	3-31-27	..	..	..	..	47⅛	18
71⅛	38⅝	900	43¾	42½	43¾	General Asphalt	(sh)	413.333	N.P.	50cQ	.....	96¾	65	94⅞	68	94⅜	42¼
116⅞	52¼	11,000	76	73⅛	74⅜	Houston Oil		$24.968.600	$100	.....	.....	175¾	60⅛	167	79	109	26
32	19⅜	1,400	22	21⅛	21½	Independent Oil & Gas	(sh)	1.362.295	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
28⅜	8⅞	2,200	11⅜	11	11¼	Indian Refining		$12,565,070	$10	.....	5-31-24	12⅛	7⅝	39⅝	9	53	13⅛
26½	21¼	200	25	25	25	Lago Oil & Transport	(sh)	3.992.122	N.P.	.....	5- 1-27	37¾	20½	39½	27⅜	38⅜	16½
12	8	1,000	8¾	8½	8¾	Louisiana Oil Refining	(sh)	1,190.063	N.P.	.....	.....	18⅛	10	19¾	9⅜	18	7
10⅜	4½	100	4½	4½	4½	Maracaibo Oil	(sh)	330.000	N.P.	.....	.....	22¾	12	25½	12½	18½	5⅛
37	16½	6,600	20⅜	19⅝	19⅞	Mexican Seaboard	(sh)	1,244,383	N.P.	.....	12-15-20	9¼	3	72	4⅝	69⅜	9¼
33	22¼	400	24½	24⅛	24½	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅜	25½	44½	25⅛	39⅞	22¼
2½	⅞	100	1⅛	1⅛	1⅛	Middle States, ctfs.		$23.736.130	$10	.....	7- 1-23	3⅜	1⅝	7⅜	2⅜	5⅛	⅜
64¼	51⅝	100	58	58	58	Pan American P. & T.		$50.084.700	$50	.....	10-20-27	65⅞	40⅛	54⅞	38¼	69	40½
67½	50½	400	58	57¾	58	Pan American P. & T. "B"		$121,110.650	$50	.....	11-15-24	66⅜	40¼	58⅞	37⅜	69¼	40½
..	..	No sales.				Pan American Western B		$400.000	N.P.	.....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
12¾	4⅛	200	6¾	6¾	6¾	Panhandle P. & R.	(sh)	199.370	N.P.	.....	.....	18⅞	8	21¾	11½	15¼	3
80	47½	100	73	73	73	Panhandle P. & R. pfd.		$2,564.400	$100	....	7- 2-23	83	54	108	70	76	47½
44¾	29⅛	4,700	32½	31⅞	32½	Phillips Petroleum	(sh)	2,593,075	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
		No sales.				Phillips Petroleum rts		.....	....	.....	.....	..	..	..	..	..	..
2½	1	200	1⅛	1⅛	1⅛	Pierce Oil Corp.		$29,622,831	$25	.....	.....	1⅛	½	5¼	½	3⅜	1
7¼	2¼	1,800	4⅞	4½	4⅞	Pierce Petroleum	(sh)	2,500,000	N.P.	.....	.....	5½	2½	7	3½	5⅞	½
54	36	500	37½	36⅛	36⅛	Prairie Oil & Gas		$60,848,000	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
60	44⅛	500	45½	45½	45½	Prairie Pipe Line		$101,250.000	$25	75cQ†	12-31-29	190	130¾	280	172	65	45
11⅞	6½	200	7⅜	7¼	7¼	Producers & Refiners		$37,438,950	$50	.....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
40	30	10	30⅜	30⅜	30⅜	Producers & Refiners pfd.		$2,845.350	$50	.....	5- 1-25	50	36⅞	49⅝	41	46⅜	25½
27¼	19½	900	21	20⅝	20⅜	Pure Oil		$75,959.250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30⅜	20
28¼	14¾	5,200	18⅜	17⅞	18⅜	Richfield Oil		$52,410,875	$25	50cQ	11-15-29	28⅝	25⅜	56	23	49⅝	20
25¾	15⅝	1,000	18⅝	17¾	18	Rio Grande Oil	(sh)	1,236.270	N.P.	$2A	7-25-29	..	..	37½	32	42½	15
56½	49⅛	1,500	53⅞	53½	53⅞	Royal Dutch, N. Y.	(sh)	611.303	$1.873	.....	9-13-29	54½	44¼	64	44⅝	64	43⅛
48⅜	42⅜	10	44¾	44¾	44¾	Shell Transport & Trading Co.		£23.985.000	£1	$1.45	7-23-29	18⅝	40½	47⅞	41⅜	57½	40⅝
25½	18	1,900	19	18⅝	19	Shell Union Oil	(sh)	13.066.497	N.P.	35cQ	12-31-29	31¾	23⅝	39¼	23¼	31¾	19
37	18	400	21½	21	21½	Simms Petroleum		$8.353.620	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
32	20	6,600	22¾	22	22½	Sinclair Consolidated	(sh)	5.500.000	N.P.	50cQ	1-15-30	22⅜	15	46⅝	17⅜	45	21
112¼	108	100	110	110	110	Sinclair Consolidated pfd.		$16.025.250	$100	$2Q	11-15-29	101¼	97	110	102½	111	103
42	28½	3,400	30¼	28½	30¼	Skelly Oil		$27.441.250	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
75	55½	3,600	61¾	59⅞	60⅞	Standard of California	(sh)	12.594.098	N.P.	62½cQ	2-15-30	60¾	50⅜	80	63	81⅞	51⅛
40	29	100	32	32	32	Standard Oil of Kansas		$8,000.000	$25	50cQ	12-16-29	20⅞	14⅝	37⅜	15	33⅜	18
84⅞	58	51,300	67⅛	65	67	Standard Oil of New Jersey		$634.999.200	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37¾	83	49
40⅜	30	7,400	32⅛	31⅜	31⅞	Standard Oil of New York		$445.223.675	$25	40cQ	12-16-29	34⅛	29¾	44¼	28⅜	48⅛	31⅜
70	50	200	57⅛	57⅛	57⅛	Sun Oil	(sh)	1,416.869	N.P.	25cQ	12-16-29	34⅞	30	77	31½	86⅜	55
9⅜	5	300	5¼	5¼	5¼	Superior Oil Corp.	(sh)	776.979	N.P.	.....	12-20-20	..	..	..	..	24	5¼
60½	50⅛	6,300	51½	50¾	51⅛	The Texas Corporation		$246.204.900	$25	75cQ	1- 1-30	58	45	74¾	50	71⅞	50
14½	8¼	400	9⅝	9⅛	9⅛	Texas Pacific Coal & Oil Co.		$9.304.890	$10	2½ %A‡	12-31-29	18⅞	12	26⅝	12⅛	23¾	9½
31	19½	200	30¾	28¾	30¾	Tide Water Oil	(sh)	2.191.759	N.P.	20cQ	12-31-29	29½	19	41½	19⅝	40	14
94⅞	85	100	85¼	85	85	Tide Water 5½% pfd.		$19.947.000	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
17¾	10¾	2,200	14¼	13⅞	14⅛	Tide Water Associated	(sh)	5.560.424	N.P.	30cS	2-15-30	19⅛	15¾	25	14¾	23½	10
89¾	78	100	80½	80½	80½	Tide Water Associated pfd.		$73.284.500	....	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
24	16¼	1,900	18¼	18	18⅛	Transcontinental Oil	(sh)	3.742.029	N.P.	.....	.....	10⅜	3¾	14¾	7¼	15¼	5⅛
50	37	600	41½	40⅝	41⅛	Union Oil of California		$104.342.375	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
38½	25¼	400	29½	29¼	29¼	Union Tank Car	(sh)	1,254.048	$100	$1.25Q	12- 2-29	127½	94	128⅛	110	163¾	121⅞
27	12¾	500	14	13¼	13½	Warner-Quinlan	(sh)	632.948	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
..	..	No sales.				White Eagle Oil & Refining	(sh)	505.100	N.P.	50cQ	1- 20-30	27½	20	38	20⅛	38	25
21	11½	300	16½	16½	16½	Wilcox Oil & Gas	(sh)	428,907	N.P.	.....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock.

In comparing highs and lows for the several years in the three tables it will be necessary to take into consideration cases where there have been splits in the stock.

ADOPT CONTRACT FOR CASINGHEAD GASOLINE

(Continued from Page 36)

product or products as may be manufactured at buyer's plant.

Delivery Place

2. The delivery of the casinghead gas shall be made at vapor tight flow tanks and/or gas traps furnished by seller and/or at the casingheads of the wells. Buyer may, with seller's consent, install equipment acceptable to seller on seller's storage tanks for the purpose of saving and utilizing vapors therefrom, which vapors for the purposes of this contract shall be considered casinghead gas.

Delivery Date

3. The delivery and reception of said gas shall begin on or before ....., 19.., and failure to accept and/or agree to pay for said gas by said date shall give the seller the right to cancel this contract any time thereafter before actual utilization begins by serving ten (10) days' written notice on buyer.

Lean and Flush Gas

4. The buyer agrees to take all the gas testing more than ..... gallons of gasoline per thousand cubic feet of gas; provided, that during flush casinghead gas production from the property covered hereby the buyer shall only be obligated to take ratably as to quantity with all other flush production connected to its plant. Seller shall have the right to dispose of any gas not taken or paid for by the buyer; provided that the buyer shall have the right to take any or all of such gas at any time thereafter conditioned upon buyer giving seller at least ..... days' notice of its election to so do.

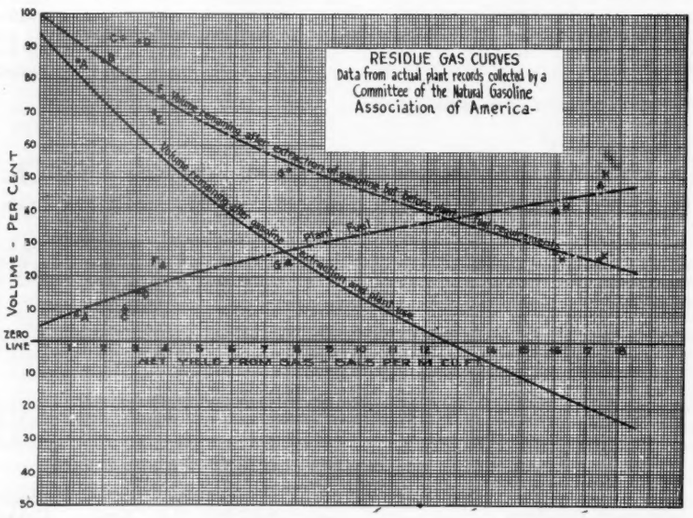
Residue Gas

5. The buyer shall return to the nearest boundary line of the seller's lease, above described, sufficient residue gas for the development and operation of said lease, the amount of such gas not to exceed that remaining from the quantity of casinghead gas delivered to the buyer from said lease after the extraction of gasoline therefrom, less the proportionate part of said residue gas necessary for gasoline plant operation both determined by the residue gas curve attached hereto; provided that in the event residue gas to be returned hereunder by the buyer shall be insufficient in quantity for the purpose of developing and operating said lease, the seller hereby reserves the right to use casinghead gas from its lease sufficient in quantity to make up the deficiency. Utilization of said residue gas so returned by the buyer shall be at the seller's risk. In the event seller accepts and uses dry gas, furnished by buyer, in excess of the amount of residue gas to which seller is entitled, seller shall pay buyer for such dry gas at delivered cost to buyer.

It is agreed and understood by and between the parties hereto, that if and when the residue gas remaining after the extraction of gasoline from such casinghead gas shall be more than sufficient for the needs of buyer in the operation of said gasoline plant and more than sufficient for the needs and requirements of seller for the development and operating purposes upon the premises from which the said casinghead gas is produced, then, and in that event, the buyer shall have the right to sell any or all surplus residue gas so remaining; provided that in the event of sale by the buyer of any or all of such residue gas, buyer shall pay to the seller herein 50 per cent of the net proceeds received from the sale of such gas, such payments to be made at the same time as other payments hereunder. Net proceeds as herein used is defined as the gross proceeds less any cost of boosting and/or transportation necessary to market such gas. It is further agreed and understood that as a basis of settlement hereunder for the sale of residue gas, it shall be determined how much residue gas the seller was entitled to have returned and the volume that actually was returned during the month for which settlement is to be made, and the difference shall be regarded as the volume of surplus residue gas available for sale from the casinghead gas delivered hereunder. The volume of surplus residue gas sold from the casinghead gas delivered hereunder shall be determined by the proportion which the volume of surplus residue gas available for sale from said delivery bears to the total volume of surplus residue gas available for sale from all casinghead gas delivered to said plant.

Diluted Gas

6. The seller hereby specifically reserves the right to introduce air, gas, or any other extraneous substance into the well or wells covered hereby or into the sand or sands from which said well or wells are producing when in the exclusive judgment of the seller the introduction of such substances is desirable in the operation of such well or wells for the production of oil even though such well or wells may be entirely destroyed as a producer or producers of casinghead gas; provided, should the seller's operations under this paragraph create a condition which in the exclusive judgment of the buyer makes the taking and utilization of casinghead gas therefrom unprofitable to the buyer, or should such


RESIDUE GAS CURVES
Data from actual plant records collected by a Committee of the Natural Gasoline Association of America
VOLUME - PER CENT
ZERO LINE
NET YIELD FROM GAS - GALS PER M CU FT

operations tend to endanger the plant or property of buyer or the lives of buyer's employes should such diluted or contaminated gas be taken, then buyer, at its election, may discontinue taking the casinghead gas from the particular well or wells while being so operated.

Right of Way

7. In so far as seller's lease permits, buyer is granted the right to lay and maintain lines and to install any necessary equipment on said lease and shall have the right to free entry for any purpose incidental to gasoline plant operations so long as such purpose does not interfere with lease operations or the rights of owners in fee. All lines and other equipment placed by buyer on said lands shall remain the property of the buyer and, subject to the terms of this contract, may be removed by buyer at any time.

Settlement Tests

8. The gasoline content shall be determined by a field compression test made in accordance with the official code of the Natural Gasoline Association of America for testing natural gas for gasoline content. The specific gravity shall be determined in accordance with the specifications and test procedure of said association for the determination of specific gravity of natural gases by the balance method. The tests for gasoline content, air content and specific gravity of the gas shall be made by the buyer quarterly except when, in the opinion of either party, a change in the method of operations of the lease will affect materially the gasoline content and specific gravity of the gas, in which event the tests shall be made at the demand of either party upon five (5) days' notice to the other party. The buyer shall notify the seller in writing ten (10) days previous to the quarterly tests in order that it may have a representative present to witness said tests and/or make joint tests with its own appliances. The content tests shall be computed on the basis of four (4) ounces above an assumed atmospheric pressure of ..... pounds per square inch absolute and at a base temperature of sixty (60) degrees Fahrenheit.

Meters

9. The casinghead gas delivered hereunder shall be measured by a suitable orifice meter, or meters, of standard make to be furnished, installed and kept in repair by buyer on the lease herein covered. The amount of gas so metered shall be computed on the basis of four (4) ounces above an assumed atmospheric pressure of ..... pounds per square inch absolute at a base temperature of sixty (60) degrees Fahrenheit and at an assumed flowing temperature of ..... degrees Fahrenheit. The buyer shall test, and if necessary adjust and repair, said meter, or meters, at or about the time the tests for gasoline content are made. Said meter, or meters, shall be open to inspection at all times by seller in the presence of buyer. In case any question arises as to the accuracy of the meter measurement said meter, or meters, shall be tested upon the demand of either party. The expense of such tests shall be borne by the party demanding same if the meter is found to be correct and by the buyer if found incorrect. A registration within 3 per cent of correct shall be considered correct. Settlement for any period of inoperation or inaccurate measurement shall be in accordance with the average readings taken during the last preceding 10 days when the meter was registering accurately and the first 10 days after the meter was restored to accuracy. If requested buyer shall send the charts to seller for checking after which they are to be returned to buyer.

Price

10. The buyer shall pay to seller for the casinghead gas delivered hereunder a price per thousand cubic feet equal to twenty (20%) per cent of the gross value of the gasoline contained in said gas when the gasoline content is less than .75 of a gallon per thousand cubic feet, twenty-five (25%) per cent when the content is .75 of a gallon but less than 1.75 gallons per thousand cubic feet and thirty-three and one-third (33⅓%) per cent when the content is 1.75 gallons, or more, per thousand cubic feet. The gross value of the gasoline contained in a thousand cubic feet of gas shall be determined by multiplying the gasoline content (determined as hereinabove provided) by .....

Payment

11. Payment shall be made by the buyer not later than the twentieth day of each month for all casinghead gas purchased hereunder during the preceding month, and at the time payment is made a statement showing full details of the accounts shall be transmitted to the seller accompanying the buyer's check in payment therefor.

Examination by the seller of the books of account kept by the buyer respecting said gas account shall be permitted by the buyer at any and all reasonable hours.

Title

12. The seller warrants its title to said gas and that it has good right to sell said gas to buyer but the buyer shall not be required to make payments until the seller shall have submitted abstracts of title covering said leasehold showing good and merchantable title in it and that it has good right to sell said casinghead gas, all to the satisfaction of the attorneys of the buyer; provided, however, if the title of seller is questioned, or involved in any action, the buyer shall have the right to withhold payment during the pendency of such action or until said title is freed from such question, or until seller furnishes bond conditioned to save buyer harmless with surety acceptable to the buyer.

Royalty

13. The seller agrees to account and pay to the lessors or royalty owners in the lease above described, in strict accordance with the provisions thereof, the royalty on the casinghead gas sold and delivered hereunder to buyer.

Vacuum

14. Upon request of seller the buyer shall apply and maintain on seller's wells a vacuum substantially equal to that maintained on offset wells by gasoline plants. Up to such maximum seller shall have control of said vacuum at all times.

Drip

15. The buyer shall keep reasonably clear of obstruction all its pipe lines through which said gas is being delivered and shall own all liquid collected in such lines.

Casualty

16. Any failure of either party hereto to perform any of the obligations hereunder shall be excused if such failure is due to fires, strikes, floods, lack of water, winds, lightning, accidents or any circumstances beyond the control of the party failing to perform.

Unprofitable Gas

17. In the event the casinghead gas from any well or wells on said lease becomes insufficient in volume or gasoline content, or for any cause becomes unprofitable for the extraction of gasoline therefrom, the buyer shall have the right to cease taking the gas so long as such condition exists. It is further provided that if at any time the volume and/or gasoline content of the gas available to buyer, or if any cause beyond its control, shall render the construction and/or operation of said plant unprofitable, buyer may, by 30 days' written notice and payment, or tender, to seller of ten ($10) dollars, cancel this contract.

Priority Rights of Sellers

18. As said premises are being operated primarily for the production of oil, the taking of casinghead gas by the buyer shall be subservient to said oil operations. The seller may, at any time, without liability to buyer clean out, deepen or abandon any well or wells on the above described properties, or may use any efficient, modern or improved method for the production of oil. Before any well or wells are taken out of service for any reason whatsoever seller agrees to first shut off the same from communication with the gathering mains.

Indemnity

19. The buyer shall indemnify and hold the seller harmless against any claims for damages growing out of the operations conducted hereunder by the buyer. Likewise the seller shall indemnify and hold the buyer harmless against any claims for damages growing out of seller's operations of the lease herein described.

Scope

20. In the event the property above described covers more than one lease, this contract shall be construed as a separate contract on each lease.

Regulatory Bodies

21. This contract shall be subject to

Republic Supply Company

OIL AND GAS WELL SUPPLIES

Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS

all the rules and regulations of any duly constituted Federal or State regulatory body having jurisdiction herein.

Arbitration

22. In the event of any dispute or controversy between the parties hereto involving the operations under this contract same shall be settled by arbitration. Each of the parties shall appoint an arbitrator and the two appointed shall select a third. The award of any two arbitrators shall be conclusive upon the parties and shall be made within 30 days after the appointment of the first arbitrator.

Term

23. Either party shall have the right to terminate this contract at the expiration of ..... years from the date thereof or on any anniversary of said date theraftер by giving the other party thirty (30) days' notice, in writing, of its intention so to do, after which each party shall be released from all further liability hereunder; provided, that in the event the oil and gas lease covering said premises should terminate before the expiration of the term of this contract then this contract shall be cancelled contemporaneously with such termination.

Assignment

24. This contract shall extend to and be binding upon the parties hereto, their heirs, administrators, successors and assigns, but no transfer of or succession to the interest of the seller hereunder, wholly or partially shall affect or bind the buyer until it shall have been furnished at the office of the buyer in the city of ....., ..., with the original instrument or with proper proof that the claimant is legally entitled to such interest.

In witness whereof the parties have hereunto subscribed their names.

.....
Seller.

.....
Buyer.

HOBBS POOL WILL BE SANELY DEVELOPED

(Continued from Page 32)

enough to attract the attention of outside oil men. The completion of the Humble Pipe Line Co.'s extension from West Texas into the Lea area and the opening up of the Humble's big well in Section 30-18-38 started the upswing of production. The Hobbs area increased from 553 bbls. a day in April to 7,313 bbls. a day in May and to 11,629 bbls. a day in June with a total production of 609,762 bbls. in the first six months of the year, a daily average for that period of only 3,369 bbls. The Lea City area, mostly in Township 21-33, produced 938,875 bbls. a day in the six months, starting with 4,927 bbls. a day in January and ending the half year with a daily average of 5,861 bbls. a day. Last week the Lea Pool averaged 5,697 bbls. from 11 wells. The Jal area in the southeastern part of the county, and near the Winkler County, Texas, line averaged from 1,250 to 1,448 bbls. per day through the half year and made 1,319 bbls. a day last week. The whole county in the first half of 1930 produced 2,095,011 bbls., a daily average of 11,563 bbls. This is a very small part of the potential production of the county.

CALIFORNIA STANDARD ANNOUNCES NEW POLICY

(Continued from Page 142)

for the product, the curtailed production of crude petroleum will be only an idle gesture and the conservation of oil so earnestly supported by the federal administration will be doomed to failure.

Cut Price Dealers

"Among the causes destructive of stabilized marketing conditions is the dealer whose only aim, regardless of the reasonableness of prevailing prices, is to take the business of his neighbor by selling below the latter's price. In a stabilized market the suppliers aim to fix a price by agreement with their dealers which will afford the latter a reasonable margin of profit, be it 3 cents or 4 cents a gallon, or whatever the figure. It is estimated that there are some 40,000 dealers on the Pacific Coast. Of these, over 39,000 are content to 'live and let live.' They take their margin and resell the gasoline supplied to them at prices fair to the public, and which yield the supplier and the dealer a fair profit. There are perhaps 1,000 dealers on the Pacific Coast whose policy is otherwise. They cut the price not because they believe it unfair or too high, but because they are determined to get another man's business regardless of the fairness of his price. The Standard Oil Co. of California announces as a policy that it will not sell its products to that class of dealer. It does not want his business. It matters not whether he is practicing his unfair competition with respect to the products of this company or of its competitors. So far as this company is concerned, it will regard the dealer who cuts prices without respect to their reasonableness and to take the trade and livelihood of his neighbor as an outlaw in the business.

"Finally, in order to do its share toward maintaining a balance between supply and demand this company will confine its manufactured gasoline to the quantity required by its actual demands."

LEDERER ANNOUNCES GASOLINE COMMITTEES

(Continued from Page 141)

M. Childers, Continental Oil Co.; J. E. Dale, Barnsdall Oil Co.; Dean Hiatt, Texas Pacific Coal & Oil Co.; E. C. LeFevre, Empire Oil & Refining Co.; Lee S. Miller, Carter Oil Co.; Norris Plank, Shell Petroleum Corp.; E. H. Schoenfeldt, Prairie Oil & Gas Co.; J. M. Vaiden, Skelly Oil Co.; C. J. Smith, Forrest E. Gilmore Co.

Legal

W. P. Z. German, chairman, Skelly Oil Co.; V. C. Mieher, vice chairman, Amerada Petroleum Corp.; Thomas J. Casey, Barnsdall Oil Co.; J. W. Cowles, Shell Petroleum Corp.; J. Wood Glass, the Henderson Co.; John Hancock, Texas Pacific Coal & Oil Co.; R. H. Hudson, Phillips Petroleum Co.; Lloyd Owens, Carter Oil Co.; Warren T. Spies, Empire Oil & Refining Co.

Membership

E. L. Peck, chairman, Empire Oil & Refining Co.; W. K. Warren, vice chairman, Warren Petroleum Co.; W. Baker, Sinclair Oil & Gas Co.; F. C. Hall, the Henderson Co.; S. S. Smith, Shell Petroleum Corp.

Motors and Regulators

D. A. Sillers, chairman, Lone Star Gas Co.; C. C. Kelley, vice chairman, The Texas Company; Paul M. Childers, Continental Oil Co.; W. F. Crawford, Deep Rock Oil Corp.; J. E. Dale, Barnsdall Oil Co.; J. L. Griffin, Skelly Oil Co.; George L. Greiner, Phillips Petroleum Co.; A. C. Lunkford, Carter Oil Co.; Norris Plank, Shell Petroleum Corp.; L. G. Rheinberger, Sinclair Oil & Gas Co.; R. I. Short, Prairie Oil & Gas Co.; E. L. Stauffacher, Empire Oil & Refining Co.

Outage

Emby Kaye, chairman, Skelly Oil Co.; W. W. Grubbs, vice chairman, Barnsdall Oil Co.; S. B. Crooks, Empire Oil & Refining Co.; M. E. Foster, Phillips Petroleum Co.; F. B. Mack, Shell Petroleum Corp.; A. T. Scherer, Sinclair Oil & Gas Co.; S. C. Harmon, Forrest E. Gilmore Co.

Plant Operators' Meetings

Dean Hiatt, chairman for Texas, Texas Pacific Coal & Oil Co.; Emby Kaye, chairman for Oklahoma, Skelly Oil Co.; C. L. Brown, Sinclair Oil & Gas Co.; J. E. Dale, Barnsdall Oil Co.; W. G. Palmer, the Henderson Co.; F. E. Shryock, Shell Petroleum Corp.; E. L. Stauffacher, Empire Oil & Refining Co.

Sales Managers

A. T. Scherer, chairman, Sinclair Oil & Gas Co.; S. B. Crooks, vice chairman, Empire Oil & Refining Co.; F. D. Bostaph, Texas Pacific Coal & Oil Co.; H. L. Edinger, Barnsdall Oil Co.; M. E. Foster, Phillips Petroleum Co.; A. F. Garrett, Chestnut & Smith Corp.; F. C. Hall, the Henderson Co.; J. A. LaFortune, Warren Petroleum Co.; O. B. Lloyd, Continental Oil Co.; J. F. Nagle, Skelly Oil Co.; A. F. Wood, Hanlon-Buchanan, Inc.; S. C. Harmon, Forrest E. Gilmore Co.

Specifications

E. W. Zublin, chairman, Texas Pacific Coal & Oil Co.; W. N. Corbet, vice chairman, Eagle-Picher Lead Co.; George P. Bunn, Phillips Petroleum Co.; S. B. Crooks, Empire Oil & Gas Co.; P. C. Coffin, Lone Star Gas Co.; H. E. Felt, Warren Petroleum Co.; Bert Frischot, Deep Rock Oil Corp.; J. L. Gallagher, Sinclair Oil & Gas Co.; H. W. Harts, Amerada Petroleum Corp.; John L. Hill, Continental Oil Co.; Emby Kaye, Skelly Oil Co.; H. W. Manley, Barnsdall Oil Co.; S. S. Smith, Shell Petroleum Corp.; I. S. Salnikov, Carter Oil Co.; A. F. Wood, Hanlon-Buchanan, Inc.; C. J. Smith, Forrest E. Gilmore Co.

Tank Car

W. W. Grubbs, chairman, Barnsdall Oil Co.; F. B. Mack, vice chairman, Shell Petroleum Corp.; L. E. Frazier, Phillips Petroleum Co.; J. R. Freeman, Carter Oil Co.; A. C. Holmes, Empire Oil & Refining Co.; A. T. Scherer, Sinclair Oil & Gas Co.; S. C. Harmon, Forrest E. Gilmore Co.

Technical

R. C. Alden, chairman, Phillips Petroleum Co.; R. E. Baker, vice chairman, Shell Petroleum Corp.; H. S. Cole, Jr., The Texas Company; C. C. Chaffee, Continental Oil Co.; G. M. Davidson, Empire Oil & Refining Co.; J. L. Gallagher, Sinclair Oil & Gas Co.; Emby Kaye, Skelly Oil Co.; H. W. Manley, Barnsdall Oil Co.; W. A. Melton, Deep Rock Oil Corp.; W. G. Palmer, the Henderson Co.; E. W. Zublin, Texas Pacific Coal & Oil Co.

Traffic

C. R. Musgrave, chairman, Phillips Petroleum Co.; J. R. Freeman, vice chairman, Carter Oil Co.; S. B. Crooks, Empire Oil & Refining Co.; F. C. Hall, the Henderson Co.; F. G. Robinson, Lone Star Gas Co.; R. E. Stewart, Barnsdall Oil Co.; Ed Starr, Texas Pacific Coal & Oil Co.; A. F. Winn, Skelly Oil Co.; S. C. Harmon, Forrest E. Gilmore Co.

Liquefied Gas

Emby Kaye, chairman, Skelly Oil Co.; J. R. Jarvis, vice chairman, Lone Star Gas Co.; R. C. Alden, Phillips Petroleum Co.; G. M. Davidson, Empire Oil & Refining Co.; M. L. Haider, Carter Oil Co.; John L. Hill, Continental Oil Co.; H. W. Manley, Barnsdall Oil Co.; W. G. Palmer, the Henderson Co.; W. W. Robinson, Jr., The Texas Company; Paul Ryan, Shell Petroleum Corp.

Publicity

S. S. Smith, chairman, Shell Petroleum Corp.; Emby Kaye, Skelly Oil Co.; H. W. Harrington, Phillips Petroleum Co.

NATURAL GASOLINES AND FUELS ARE LOWER

(Continued from Page 30)

would be in a position to increase their refinery output.

Gasoline and Naphtha

Although lower-priced U. S. Motor gasoline was available from other areas on a competitive basis, 5¾ cents appeared to be the low of Oklahoma market on sales to the trade. Spot sales ranged up to 6¾ cents. The movement was heavy. A few refiners are not offering material on the spot market, their own stations and jobber contracts taking their current output and also reducing their storage.

Other refiners are anxious to move the domestic grades from day to day and they continue to meet stiff competition. Sales by a group of middle western refiners centering in Chicago have practically forced them out of Michigan, Wisconsin, Ohio and parts of Indiana and Illinois.

Refiners who are making better than a U. S. Motor grade based either on volatility or antiknock rating are in a stronger position than those who are forced to join in the scramble for spot business where premium grades are of little value. Refiners with Ethyl Gasoline contracts also are fortunate, as the demand has shown a large increase.

The higher gravity gasolines are moving slowly. This is the dull time of the year for these grades in the domestic market. Several inquiries on export material were reported during the week but no large orders were actually placed in the Mid-Continent. Independent export buyers are said to have been seeking the 375 endpoint grade as low as 6¼ cents basis North Texas.

The low prices prevailing for the natural gasoline have been reflected in the demand for the 350 and 360 endpoint grades and prices are one-fourth lower than they were a week ago.

Natural Gasolines

After dropping to a low of 4¼ cents for Grade A, 4 cents for Grade AA and 3¾ to 4 cents for remaining grades the latter part of last week, the demand for natural gasolines improved on Monday and Tuesday of this week. The bulk of the output for July is now mostly sold and spot purchases from day to day should absorb the remainder. Manufacturers now feel that prices are at bottom with higher prices in prospect should the refinery market improve.

Fuel Oil, Distillate, Gas Oil

There have been more inquiries and actual sales of furnace oils. The consuming season in the northern states starts in a little over a month and many buyers have not made arrangements for their supplies. Although there is a demand for all the better grades, there are many inquiries for material which comes

SNAPPED AT HOBBS FLYING FIELD, NEW MEXICO

Left to right: Hugh Williams, state corporation commissioner of New Mexico; Governor Richard C. Dillon, of New Mexico; J. M. Murray, of the Murray Tool & Supply Co.; A. L. Spencer, of John J. Harden & Co., New Hobbs, N. Mex.

within the gas oil range so far as gravity is concerned. Some of the best results have been obtained from a zero gas oil with a flash around 200. Higher flashes are acceptable when the oil is to be used in apartment houses, office buildings and other large heating plants. The lower gravity material is less in price and has more heat units per gallon. Some of the burners for small homes also give satisfactory results with the lower gravity and higher flash oils.

Due to this condition there is greater scarcity of zero cold test gas oil of low viscosity than there is of the regular grades of 36-38 and 38-40 distillates. The former sold in Oklahoma as high as 2⅝ cents this week and the distillates were freely available at 2¾ cents.

The industrial grades of fuel oil are being sold over a price range of 45 to 52½ cents per barrel. Railroad contract requirements have increased in a few cases due to the movement of farm products to markets.

Kerosene

A few refiners have stated that their kerosene movement to regular buyers will increase before the end of the month. Greater demand for tractor fuel starting in August is responsible. This also applies to the special tractor fuels made by a few refiners and usually sold under the kerosene price. A few sellers are advocating lower tank wagon prices on kerosene claiming that the consumer demand especially for tractor fuel, would be stimulated. Due to the low prices for gasoline many farmers use that product although kerosene would be more economical if tank wagon prices were lowered.

The 41-43 water grade is quoted the same as last week—4¼ to 4¾ cents. The higher gravity grades available at a premium of one-fourth cent.

Lubricants and Wax

Mid-Continent and other refiners of western oils have their backs against the wall in competing with eastern refiners including Pennsylvania refiners who operate with Pennsylvania grade crude oil. Desirable jobber accounts on finished motor oils and compounders located in the Middle West are being quoted delivered prices under the Mid-Continent market.

A few manufacturers have adopted a policy of meeting this competition regardless of price. Current quotations for that reason are nominal, actual prices varying with individual sales.

A price of 2 cents for 124-126 appears to be the high of the wax market in Oklahoma. Sales of 1¾ and 1⅛ cents were made during the week.

FURTHER CURTAILMENT APPROVED BY TEXANS

(Continued from Page 31)

which were compiled from nominations made by pipe line companies and buyers of crude, and from current oil runs.

District—	Present dy. ave. prod.	Estimated demand
Gulf Coast	145,500	145,840
Southwest Texas (including Refugio, Pettus and Laredo)	119,550	107,760
West Texas	307,350	288,460
North and West Central Texas	142,800	110,860
Panhandle	108,000	94,550
East Central Texas	40,100	39,390
Total	863,450	786,860

In the above tabulation it can be seen that supply and demand balance, on the Gulf Coast and in East Central Texas, but there is an oversupply in Southwest Texas of about 12,000 bbls., in West Texas about 19 000 bbls., in North and West Central Texas (Wichita Falls and Ranger) of 32.000 bbls., and in the Panhandle of 13,500 bbls., a total of 76,500 bbls.

In the comments which follow, some general recommendations are set forth. It will be understood that no detailed survey of producing areas has been made and that undoubtedly some areas that should receive attention are not mentioned.

Gulf Coast

Due largely to favorable geographical position, oil from the Gulf Coast fields is in great demand. Several producing areas are pinched, such as Sugarland and Raccoon Bend. There are some flush or semiflush fields such as Barbers Hill, Spindletop and Humble that have been under restriction. It is recommended that each of the Gulf Coast fields be restricted to its present production.

Southwest Texas

This district, including Refugio, Pettus and Laredo, shows an overproduction of 12,000 bbls. per day. This lack of demand occurs principally at Salt Flat and Darst Creek, and each of these fields can stand proration in a greater or lesser degree.

While Pettus is now producing only about 5,000 bbls. per day, it may be developed into a field of importance and steps should be taken to restrict the output should it become necessary.

Refugio, due to its location near the coast and also for the excellent refining qualities of the oil, has demand in excess of its present production. It has never been under restriction, but it could, if necessary be prorated, perhaps with beneficial results with respect to its ultimate recovery.

West Texas

The excess demand of 19,000 bbls. in this district will be absorbed when Yates reduces to 100.000 bbls. and Ector County to 12,000 bbls.

Here proration has been more widely practiced and more attention given it than any other portion of the State. Yates is the one example of almost perfect control under proration and it has been made to bear the greater part of the burden of Texas.

Big Lake, Reagan County, could possibly be cut 5,000 bbls. per day from its present production of 17,000 bbls. In as much as the field is controlled by two companies it seems that the drilling of deep wells at least should be suspended and that proration could be put into effect with minimum inconvenience to those directly interested. It is recommended that the committee take up the matter of restricting this field with its operators and ask them to bear a part of the burden of proration.

Crane and Upton Counties could possibly be cut 5,000 bbls. There are six flowing wells on the McElroy-University line that are now making about 9,500 bbls. per day, and a reduction of at least 3.000 bbls. could be made from this group alone.

Winkler County—The natural decline of this field as well as the water conditions would seem to make further restrictions unnecessary.

North and West Central Texas

It appears that there is an oversupply of 32,000 bbls. in this district, Wichita Falls and Ranger areas, and, it is perhaps the most difficult area within the State to prorate, as there are about 23,900 producing wells within the district with no areas of large flush production. Some of the deep wells in southern Young County, the Newcastle shallow area in Young County, and others in Wilbarger and Baylor Counties, Jack, Cook and Montague Counties offer immediate curtailment possibilities, as the average well production is relatively high. Certain pipe line companies have served notice that they will take only 70 or 75 per cent of the production from leases to which they are connected. Unless all pipe line companies serving the area enforce the same restrictions inequalities of output will result. It is recommended that, throughout this district, it be ascertained which wells and leases are now being operated at what might be considered marginal production, and that the market outlet, above the production of these wells be distributed ratably among the rest of the wells, taking into consideration depths, age, water conditions, repressuring, vacuum, etc.

Panhandle

There is an excess of supply over demand in this district of 13,700 bbls. This reduction can be made by placing the Pampa Field under restriction. It is recommended that the Yates plan be used here. There is a serious condition existing at Pampa, and it should receive immediate attention.

East Central Texas

Supply and demand balance in this district. However, attention is called to the Van Field, which is now restricted to 25,000 bbls. per day. Efforts should be made to keep this field at this figure.

There has recently been opened up in Williamson County an area known as the Chapman Field. It has had no pipe line outlet and not much oil has yet been marketed. It has a present potential of 12,000 to 15,000 bbls. of oil per day. Some means of restricting this production and of finding an outlet for this oil should immediately be found, else there will be the usual distress crude thrown on the market to the detriment of every other field in the State.

In general, it might be said that here is cause and necessity for immediate action, and that delay in putting into effect restrictions throughout the State will result not only in actual waste but in economic loss.

Very truly,
DAVID DONOGHUE,
Technical Advisor.

Late Fields

(Continued from Page 42)

north end of the pool, has Silicious lime at 6.410 feet, where it had a showing of water at 6,440-50 feet. The test was plugged back to 6.390 feet, and is landing the 6-inch casing to test.

The Indian Territory Illuminating Oil Co.'s No. 1 George, SW cor., Section 7-11-2w, in the extreme northeast end of the field, was opened for a production test and made 185 bbls. of oil in 20 hours and 30 minutes. The oil was found in a shallower sand at 5,481-86 feet.

Prairie Oil & Gas Co. and others' No. 1 Rule, C NW NE, Section 8-19-1w, Payne County, had Misener sand at 4,-859-64 feet, where it made 132 bbls. the first hour; 48 bbls. the second hour and 90 bbls. the third hour. The gas was estimated at 5,000,000 feet. The well is an offset to the recently completed well by the Reiter-Foster Oil Corp. in Section 5-19-1w.

Gardner Petroleum Co. and Tidal Oil Co.'s No. 1 Edwards, C SE NE, Section 13-19-1w, had the Viola lime at 4,938 feet and was drilling in the Viola at 4,965 feet with 4,000 feet of fluid in the hole.

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW, Section 32-23-4w, Garfield County, wildcat, had Wilcox sand at 6,-132 feet with a showing of oil and was drilling in sand at 6,150 feet with no increase.

Sinclair Oil & Gas Co.'s No. 1 Stewart, C SW SW, Section 33-27-16w, Woods County, wildcat, had a showing of oil in chert and sand at 7,023 feet where it was drilling on the report of July 15.

The Konawa Pool made a total of 25,822 bbls. from 68 wells on the gauge of July 15. The pool has a total of 85 completed wells.

Hilton Phillips and others' No. 4 Hyde, NE cor. SW NE, Section 20-6-6, Konawa Pool, was opened for a production test and made 3,820 bbls. in 21 hours and 45 minutes.

Gypsy Oil Co.'s No. 1 Davis, NW cor. NE NW, Section 28-6-6, in the Konawa Field, was drilling deeper at 3.760 feet in Simpson sand, where it swabbed 72½ bbls.

MICHIGAN

MUSKEGON, Mich., July 12.—Gibson, Johnson & Borden, Inc., of Muskegon, brought in the second well of a new Michigan pool last night on the Lucius Cole lease near the village of Leaton about 6 miles north of the city of Mount Pleasant.

The well came in flowing by heads at the rate of about 300 bbls. every 24 hours from the Dundee formation and is the first of two wells being drilled on the Cole lease. It is about a quarter of a mile from the New York Petroleum Corp.'s No. 1 P. J. Marthey, a 540-bbl. initial oil producer with which the new pool recently was opened.

Dundee limestone was topped in No. 1 Cole, NW NE SW, Section 19-15n-3w, Denver Township, Isabella County, at 3,610 feet. First gas was struck at 3,643 feet and oil was hit at 3,647-58 feet. Drilling will be continued and it is believed production may be increased before completion to about 500 bbls. a day.

No. 2 Cole already has been started 660 feet east of No. 1. About 10 other wells are drilling in the vicinity.

The Reed Oil Co. started to move in yesterday for the first of a series of test wells throughout Muskegon County.

The first well will be drilled on the H. Mann lease, NE NE, Section 29-11n-17w, Fruitland Township, about 5 miles west of Dalton and the same distance northwest of the field in Laketon Township.

WEAKENING QUOTATIONS IN COASTAL FUEL OIL

HOUSTON, Tex., July 15.—The easing up in the Gulf Coast fuel oil situation the past several weeks is being reflected in a weakening of quotations on the part of the sellers from the firm structure which has been maintained since early in the year. As a result quotations on fuel oil in cargo and barge lots Monday and Tuesday ranged from 5 to 10 cents lower than previously.

With apparently plenty of material available bunker oil for cargo movements generally was quoted Tuesday from 75 to 80 cents. This weakening, however, has had very little effect on the bunker small lot market which is being maintained around $1.05.

In contrast to fuel oils, gasolines for domestic tank car demand Tuesday indicated a slightly firmer touch. Prevailing quotations average around 7½ cents. While this figure could be shaded for spot sales it was evident that this business at lower prices was limited. Other products continued unchanged. Pale and red oils continued to be held firmly in price with only routine sales. Gas oils were steady.

ENLARGE TOLEDO REFINERY

TOLEDO, Ohio, July 13.—Engineers for the Gulf Refining Co. it is said here have practically completed plans for the enlargement of the refinery here formerly owned by the Paragon Refining Co. The Paragon refinery and other properties were recently acquired by the Gulf Oil Corp.

New crude distillation and cracking equipment is to be installed. These units will double the present capacity of the plant which is rated at 8,000 bbls. daily. The refinery early next year will be connected to a new crude oil line which the Gulf interests will build from Oklahoma. The company recently completed plans for the construction of a refinery on Neville Island near Pittsburgh and has announced its intentions to build a plant at Cincinnati.

TEST IN NORTHERN ILLINOIS

CHICAGO, June 12.—Parties associated with the Hughes Oil Co., who have been active in connection with the development of the Old Dutch refinery at Muskegon, are planning to give the northern part of the State a real test of the underlying strata. The parties interested in the proposed test well have acquired leases, they state, of approximately 25,-000 acres in the vicinity of Kankakee in the northeastern part of the State. Work has been begun on their first well which is located near Momence, on the Dixie Highway and according to Mr. Hallberg who is in charge of operations, the 500-foot depth was passed last Friday night and good progress is being made. The rig is of the Pennsylvania type and was shipped to the location from Toronto. The plan is to drill until oil has been struck or the promoters have satisfied themselves that there is no use in drilling deeper.

TWO MORE DRY HOLES IN VAN ZANDT SEEM TO LIMIT EXTENT OF FIELD

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., July 14.—Van Zandt County was marked with a couple more dry holes this week, while the Van Pool seemed defined in two directions by two other wells which were not overly encouraging. Pure Oil Co.'s No. 1 R. L. Wells was drilled deeper to 2,936 feet and made an initial production of 417 bbls. on choke, and the company's No. 1 Jarmon, the discovery well of the field, was rigging up to drill deeper.

Humble Oil & Refining Co.'s No. 1 Freeman on the 20-acre J. A. Freeman farm in the John Walling Survey, about 1,110 feet east of production on the Pure Oil Co.'s Mrs. C. White 45-acre farm, looked like a small well at a total depth of 3,014 feet after topping the Woodbine sand at 3,012 feet. A drill stem test was made, yielding three joints of rotary mud and only one joint of oil, the test now is shut down for orders. This looks considerably like a defining point on the east side of the field while Pure Oil Co.'s No. 1 Brawner to the north of the field looks like a boundary marker in that direction. No. 1 Brawner in the L. M. Brawner 147.9-acre tract in the John Walling Survey, approximately 3,000 feet northeast of a producer on the R. V. White farm, was completed at a total depth of 2.924 feet making 185 bbls. on choke in the 24 hours then stopped flowing. The company is now swabbing the well trying to bring it back on flow, but it is acting similar to the Magers, the first drilled test to the north of the field which did not make much of a well in comparison to the ones drilled before it.

Farther to the north of the Brawner well the Imperator Oil Co. has been endeavoring to make a Nacatoch sand producer out of its No. 1 Luther in the western part of the G. L. Luther farm, but at the present time is waiting on cement to set after setting casing, and nothing can be told in particular about the chances for production, although saturated Nacatoch sand was cored from 1,164-75 feet, and there was a possibility of it making a small producer from this formation. It is about 5,500 feet north of production in the Van Pool.

Broderick and Calvert are moving material in on their location staked on their 2.07-acre tract on the northwest corner of Mrs. M. F. Shirley 38-acre tract in the John Walling Survey, about midway between production in the Van Pool and the Humble Oil & Refining Co.'s No. 1 Carroll, which was completed last week. The Texas Company is drilling on an east offset location to the Humble's No. 1 Carroll, but the Imperator Oil Co. which has a lease on a narrow strip between these two locations has not yet made a location for its test.

D. H. Byrd's No. 1 J. D. Hill, 1½ miles southwest of Alba in the McMahan Survey, Rains County, cored some sand this week at 4,089-91 feet showing a trace of oil. This sand is a phase of the Eagleford shale. The test is running normal on the Pecan and Austin chalks according to geologists in the field who are watching this area.

EAST CENTRAL TEXAS

Boggy Creek	3,630
Cedar Creek	25
Currie	286
Hill County	35
Mexia	4,122
Minerva	580
Nigger Creek	180
Powell	5,705
Richland	210
Th all	40
Van	24,408
Wortham	780
Total	40,001
Total week ending July 5	41,348
Decrease	1,347

COMPLETIONS IN EAST CENTRAL TEXAS

Week ending July 12

Anderson County

Sun Oil Co.'s No. 2 Bowers & Mairs, Pecan Gap 1,148 feet, dry and abandoned; total depth 2,041 feet.

Van Zandt County

Century Oil & Gas Co.'s No. 1 W. J. Carns, Pecan Gap 2 314-2,505 feet, dry and abandoned; total depth 3.520 feet. Grand Saline Oil Co.'s No. 1 Mrs. S. A. Stewart, Pecan Gap 2,485-2,570 feet; Woodbine sand 4.238-78 feet, dry and abandoned; total depth 4.278 feet. Pure Oil Co.'s No. 1 Brawner, initial production 185 bbls.; total depth 2.924 feet. Same company's No. 1 Miller, initial production 421 bbls.; total depth 2,930 feet. The Texas Company's No. 1 Bracken, initial production 715 bbls.; total depth 2.930 feet. Pure Oil Co.'s No. 1 Wells, drilled deeper to 2,936 feet; initial production 417 bbls.

EAST CENTRAL TEXAS WILDCATS

Week Fnding July 14

DELTA COUNTY

C. A. Everts' No. 1 Smith, 300 ft. N and 150 ft. W of 38-ac. tract, 3 miles NE of Cooper in J. U. Ranfro Sur. ..... Location.

FANNIN COUNTY

North American Pet. Co.'s No. 1 Allen, 700 ft. N and 150 ft. W in N. R. Broadfoot Sur., 9 miles N of Honeygrove ..... Shut down 977 ft.

E. M. Rogers' No. 1 McSwan, 300 ft. S and E of Michael Daly Sur., in Juana Telgando Sur., 1½ miles NE of Lomasco ..... Shut down 1,100 ft.

HENDERSON COUNTY

H. E. Ashburn et al's No. 1 T. E. Barry, center of Barry's 55-acre tract in A. York Sur. ..... Shut down 2,325 ft.

L. G. Bradstreet's No. 1 Julia J. Shaunessy, 2,776 ft. from N and 300 ft. from W of Sur. or farm, John Isard Sur. ..... Moving in material.

Chapman's No. 1 Cade, 1,662 ft. from N and 3,294 ft. from W of J. B. Dorsey Sur. ..... Shut down 3,060 ft.

Cranfill & Germany's No. 1 Clara C. Stow, 2,203 ft. from N and 471 ft. from S of Guadalupe Acosta Sur. ..... Drlg. 1,686 ft.

George Pace et al's No. 1 Mrs. Sarah Anthony, 273 ft. N and 132 ft. W of SE cor. of S. Anthony 632-ac. tract, Jose W. Battvan Sur. ..... Derrick.

Sunray Oil Co.'s No. 1 Davis, 600 ft. S and W of most easterly NE cor. of 164-ac. tract, Eldridge Harris Sur. ..... Location.

HUNT COUNTY

Branson et al's No. 1 West, 350 ft. N, 350 ft. W of W 60-ac. tract, Jas. Rooces Sur. ..... Drlg. 1,680 ft.; top Austin chalk 1,415 ft.

KAUFMAN COUNTY

Shaw & Alexander's No. 1 Barrow, 2,360 ft. S and 200 ft. W of R. A. Terrell Sur., 4½ miles N of McCoy ..... Spudded and shut down.

LAMAR COUNTY

Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. ..... Spudded and shut down.

NAVARRO COUNTY

Bateman Oil Co.'s No. 1 McGowan, 250 ft. from S and 3,000 ft. from E in Morris Webb Sur. ..... Drlg. 3,152 ft.; base Austin 2,685 ft.

Killam & Phillips' No. 1 Wilson, 150 ft. S and E of 62½-ac. tract in Wm. Bridges Sur. ..... Spudded.

Navarro Oil Co.'s No. 2 Mathews, 3,600 ft. from S and 1,140 ft. from W of Smith Sur., 3 miles E of Dawson ..... T. D. 1,450 ft.; fishing.

Wheelock's No. 1 Castles, 150 ft. from S and W of 31.5-ac. tract in Abner Mathews Sur., 1 mile N of Eureka ..... Drlg. 2,835 ft.; base Austin 2,802 ft.

Young et al's No. 1 Farmer, 700 ft. from S and 400 ft. from E of 110-ac. farm in F. Finley Sur. ..... Shut down 910 ft.

RAINS COUNTY

Everett & Morrison's No. 1 Franklin, 640 ft. from S and E of 75-ac. tract in John Christian Sur., 6 miles SE of Emory ..... Spudded and shut down.

Owens & Sloan's No. 1 Hill, 150 ft. out of NW cor. of 150-ac. tract, T. McMahon Sur. ..... Coring 4,101 ft.; show oil 4,089-91 ft.; in sand.

RUSK COUNTY

Mass et al's No. 1 Mathews, 2,244 ft. from N, 4,356 ft. from E, Dalines Cartinas Sur. ..... Rigging up.

SMITH COUNTY

McElreath & Suggett's No. 1 J. Gilliam, 200 ft. from N and 200 ft. from W of Gilliam 78-acre tract, J. C. Robertson Sur ..... Derrick.

Owens & Sloan Oil Co.'s No. 1 Starnes, 846 ft. along W lines of John Waller Sur. from NE cor. of J. O. Dillard Sur., and 80 ft. E at right angles to W line of J. Waller Sur. ..... Shut down 1,322 ft.

Sutton et al's No. 1 W. D. Hammond, 150 ft. out of SW cor. W. D. Hammond tract in Jas. Reed Sur. ..... Drlg. 4,160 ft.

Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Lagrone Sur., 4 miles SE of Winona ..... Spudded.

VAN ZANDT COUNTY

L. R. Barton's No. 1 Wamble, 300 ft. from S and W of 100-ac. tract in Pleasant Young Sur. ..... Derrick.

Broderick & Calvert's No. 1 M. F. Shirley, 150 ft. from W in C of N and S lines of 2.1-acre strip, John Walling Sur. ..... Moving in material.

E. L. Chapman's No. 1 Charles Wolverton, 215 ft. from N, 60 ft. S of NE cor. of Wolverton 10-ac. tract, William James Sur. ..... Drlg. 2,850 ft.

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Will start up.

Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E lines of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... T. D. 3,071 ft.; will abandon.

Hartt Oil Co.'s No. 1 Dr. L. M. Cox in A. C. Night Sur., 1,785 ft. N of S line and 624 ft. E of W line ..... Derrick.

H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Location.

B. P. Hervey's No. 1 Foster & Smith, 150 ft. S and 150 ft. W of 104-ac. tract, Margaret Neal Sur. ..... Rigging up to drill deeper

Howard & Dooley's No. 1 Elliott 188-ac. tract in W. H. Bundy Sur. ..... Derrick blew down.

Priest et al's No. 1 Blewitt, 175 ft. NW and SW of SE cor. of NW 84-ac. tract, E. Porter Sur. ..... Drlg. 1,830 ft.

Pure Oil Co.'s No. 2 Leonard, 732 ft. from N and 200 ft. from W, Mund Gross Sur. ..... Comp. as pumper; no production gauge.

Pure Oil Co.'s No. 1 Davis, 127 ft. from S and 200 ft. from W of 139-ac. tract, Nacogdoches County School Land ..... Derrick.

Pure Oil Co.'s No. 1 W. F. Swain, 220 ft. from W line and 250 ft. from N line 48-ac. tract, John Walling Sur. ..... Rigging up.

L. B. Pruitt et al's No. 1 T. J. Luther, 50 ft. E, 170 ft. from N of SW cor. of T. J. Luther 32-acre tract, M. Gross Sur. ..... Set 10-in. csg. 144 ft.

Short et al's No. 1 B. C. Andrews, 330 ft. N and 160 ft. E of NE cor. of J. P. Farley 60-ac. tract in Margaret Neil Sur. ..... Shut down 3,635 ft.

Texas Chief Oil Co.'s No. 1 Foster, 600 ft. E of W line and 600 ft. N of S line of W. P. Foster's 151-ac. tract in F. Montgomery Sur., 7 miles south of Canton ..... Drlg. 1,265 ft.

The Texas Company's No. 1 W. H. White, 225 ft. E of W line and 748 ft. from N line 20-ac. tract, John Walling Sur. ..... Location.

Van Zandt Oil & Dev. Co.'s No. 1 Robinson, located NE cor. of Y'Barbo Sur., 4 miles E of Grand Saline .... Drlg. 4,266 ft.

WOOD COUNTY

Big Indian Oil Co.'s No. 1 R. J. King, 450 ft. W of E line and 150 ft. N of S line of King's 109-ac. tract in Wm. Barnhill Sur. ..... Drlg. 4,374 ft.

Dorn Scores Bradford Oil Men Who Delay in Reducing Production

BRADFORD, Pa., July 12.—Forest D. Dorn, president of the Pennsylvania Grade Crude Oil Association, in his address to the oil producers of the Bradford, Bolivar and Allegany Fields, at a dinner meeting in The Holley last night, scored the Bradford oil producers for their lack of co-operation in signing up for the curtailment program.

"The larger percentage of producers in Bolivar signed up and played the game," said Dorn, "and the larger percentage of the cut in production took place in the Bolivar Field." Continuing Mr. Dorn said:

"Out of 450 Bradford producers, only 51 have signed up. A few cannot carry the load, not that they are not willing to. What is the matter with the man who is not cutting at all?

"Every man who thinks this is right must carry on. You should be as interested as your committee is. We understand that a number of producers believe in the five-year curtailment, but they refused to sign up. If a man means what he says, why doesn't he sign?

"The 51 operators who signed up are losing $40,000 daily. If you do not help them, they will not keep their agreement, because they cannot. They have lost nearly $1,400,000 a month since May 16."

Speaking of the eighth consecutive drop yesterday, Dorn said that the price would drop more than ever without the co-operation of the majority of producers. He said that one-sixth of the time on the 50 per cent curtailment has passed and that if more of the producers do not sign within five days, "It is no use."

Richard M. Haskell told about the proposed four methods for curtailment: To shut off water entirely or as much as possible, reducing the pressure to 5 or 10 pounds; to shut off or reduce the amount of oil; to pump the water out of the sand; and to watch the production as close as possible, week by week, or oftener.

SHELL BUYS WESTERN OIL

The purchase of the Western Oil Co. of Ludington, Mich., has been announced by the Shell Petroleum Corp. The transfer of the Western properties became effective Thursday, July 10, at which time their operation by Shell began. No changes in the operating personnel of the Ludington organization are contemplated by Shell, according to company officials. The former properties of the Western Oil Co., with main offices at Ludington, consist of five service stations and four bulk plants located in Ludington.

Blackfeet Reservation Leasing Is Approved By Secretary Wilbur

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 14.—Secretary Ray Lyman Wilbur of the Interior Department, in a letter addressed to Senator Walsh (Democrat) of Montana, recommended that lands of the Blackfeet Indian reservation in Montana be leased for oil and gas upon satisfactory application.

The recommendation provides for leasing the reservation at a rental of $1 per acre, a royalty of 12½ per cent of the amount or value of all oil or gas produced, and at a bonus to be determined by bidding at public auction or under seal. The letter follows:

"My Dear Senator Walsh: We have completed an economic review of the oil and gas situation in Montana, and I have today approved a recommendation of the special oil committee of this Department to lease the lands on the Blackfeet Indian reservation for oil and gas upon satisfactory application. The following is an excerpt from the report approved today, which may be of interest to you:

"'Whereas in Wyoming far more gasoline is manufactured from Wyoming oil than can be used in that State or even in the Rocky Mountain region, in Montana the gasoline manufactured from Montana oil supplies considerably less than half the needs of the State. Montana, therefore, constitutes a market for, rather than a source of, petroleum products. Moreover, the production of oil in Montana has decreased from about 7,500,000 bbls. in 1926 to slightly less than 4,000,000 bbls. in 1929.

"'As a result of these several conditions the price obtainable for crude oil produced in Montana fields is appreciably greater, and in the Kevin-Sunburst Field, which is nearest to the Blackfeet Reservation, is 50 per cent greater than the market price for oil of the same gravity produced in the Salt Creek Field, Wyoming

"'While, therefore, a general condition of overproduction prevails in the Rocky Mountain region as a whole by reason of the surplus in Wyoming, the price structure for crude oil in Montana is that of a region in which the demand is commensurate with the supply.

"'It appears, therefore, that the present is a reasonably favorabe time to obtain revenue for the Blackfeet Indians by leasing the reservation lands that are prospectively valuable for oil or gas. The prospect of finding substantial quantities of oil or gas on these reservation lands is not particularly bright, and it would therefore be desirable, if such lands are leased, to require an annual rental that will provide revenue for the Indians regardless of whether oil or gas is found.

"'It is believed that because of the restricted local conditions the leasing of Blackfeet lands will not serve to accentuate overproduction in the United States and will not run counter to the general policy of conserving the Nation's oil and gas resources.

"'In view of all the circumstances we recommend that, on satisfactory application, lands of the Blackfeet Indian reservation in Montana be leased for oil and gas at a rental of $1 per acre, a royalty of 12½ per cent of the amount or value of all oil or gas produced, and at a bonus to be determined by bidding at public auction or under seal'."

PETERSON COMPANY EXPANDS

CHICAGO, July 12.—The George C. Peterson Co., of this city, is building one bulk and two service stations at Elgin in this State. The company has stations in Chicago and various northern and western suburbs. A little later the company plans to add to its Elgin outlets. Bruce Byers, formerly with the Fred G. Clarke Co., is now with the Peterson company in charge of lub tank car sales.

GREAT SHALLOW POOL IN YOUNG COUNTY, TEXAS, IS ON PRORATION

By L. E. Bredberg

FORT WORTH, Tex., July 14.—One of the last pools in Texas to go on proration, and one of the few in the Wichita Falls district to be curtailed by voluntary agreement, is the new Riggs or Larimore Pool just north of New Castle in Young County, which is producing some exceptionally good wells from a shallow sand which yields "sweet" oil of 41 to 42 gravity.

This little pool was discovered by Terrell & Remington of New Castle in their No. 1 Remington, which is located in the NE of Section 2,248, T.E.&L. Survey, the well logging the pay sand at 686 feet and bottomed at 688½ feet, yielded an initial production of 12 bbls., one of the smaller wells in the field, but it led to the opening of many others which have run over 1,000 bbls. on an initial gauge.

Many dry holes were drilled on surrounding acreage before Terrell & Remington hit the pay in their discovery, but the whole of Young County is peculiar in this respect, and a good producer may be brought in next to a dry hole, and vice versa, dry holes bringing discouragement in the center of a pool, as has been proven since the 50 wells have been completed in this one pool, for the accompanying plat will show eight dry holes offsetting producers, some of them located in the midst of producing wells. No. 2 Larimore of the H. Y. Oil Co., in the NW of Section 2,247, is a "duster" which offsets a producer that cored 23 feet of sand, and the Independent Oil & Gas Co.'s No. 7 Larimore is offset on three sides by producing wells, as is the Riggs No. 2 Larimore. These dry holes are no doubt due to an extremely tight sand formation at these particular spots, precluding any possible chance of production, although in some of the other wells small shots have sufficed to bring forth production from wells which looked like failures.

42 Completed Wells

The 42 wells in the field had been credited with a daily potential of 17,000 bbls., the oil coming from sand found between 690 and 715 feet. The field was prorated to 2,500 bbls. per day, the Prairie Pipe Line Co. electing to take that amount, but at a recent meeting the outlet was cut to 1,550 bbls. per day, and another more recently announced cut would decrease this amount to around 1,345 bbls. per day. Gauges of the wells were taken today, and the tentative proration period will last to September 1, and this period will no doubt be carried through the rest of the year, for the Prairie Oil & Gas Co. announced a large cut in its daily purchases last week in the Mid-Continent fields, and this cut affects the Riggs Pool along with the rest of the areas in which Prairie has pipe lines and makes purchases. The Prairie is the only company now serving this area.

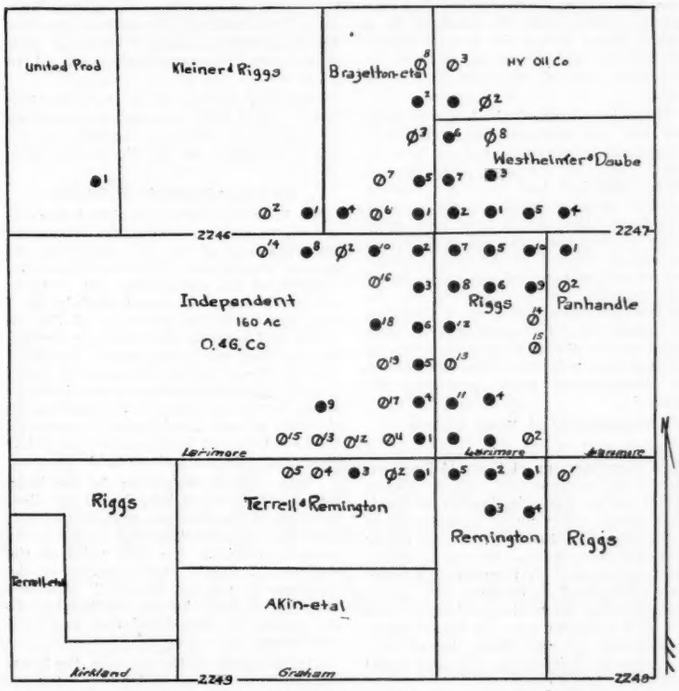
The daily potential of producing companies in field is as follows: H.Y. Oil Co., 480 bbls.; Remington, 724 bbls.; E. R. Riggs, 4,016 bbls.; Panhandle Refining Co., 408 bbls.; King Royalty Co., 576 bbls.; Kleiner & Riggs, 812 bbls.; Brazelton and others, 1,316 bbls. Three wells shut in were not gauged.

Drilling Minimized

Only necessary wells are to be drilled between the present time and September 1, and many wells are now setting shut down on top of the sand, due to the proration plan put into effect, and lack of pipe line outlet. There is a possibility that some of the operators in the field may build considerable steel storage to take care of their individual production, but as the Railroad Commission of the State of Texas rather frowns upon the storage of oil, due to the economic waste, it is doubtful whether or not much oil will be run to such storage.

The United Producers and others just completed their No. 1 Larimore in the NW of Section 2,246, making over a quarter of a mile western extension to the field, but so far, this well has no pipe line connection and is shut down, estimated as good for 150 or 200 bbls. per day from 12 feet of sand.

It is unlikely that the pool will be extended three-fourths mile north to connect up with production on the Taack ranch, which was opened up by Williams and others in their well located 150 feet from the north and east of the west 40 acres of the SW of Section 263, T.E.&L. Survey. This discovery topped the oil sand at 670 feet, same sand as found in the Riggs Pool, and was completed as a small pumper. There have been many good flowing wells brought in in this separate area since its discovery and a late report states that production has been discovered in Section 259, 1 mile northeast of the Taack Pool.



The Riggs Pool in Young County, Texas, is a remarkable shallow sand pool north of the town of New Castle. It is the first field in Young County to have been put under proration.

Between New Castle and Olney

The 8 miles intervening between the towns of New Castle and Olney have been the scene of great activity, both in drilling and leasing, for the past three months, the town of Olney seeing many wells drilled on town lots, and the whole town hedged in by derricks, while the town of Graham, about 6 miles southeast of New Castle, has been another hotbed of activity, especially since the discovery of the deep well near the town by Nash and Windfohr. This phenomenal well came in for an initial production of better than 1,000 bbls. per hour, but several offsets and nearby tests failed to pick up the production in the Caddo lime from which Nash & Windfohr's well is producing at 3,750 feet, although there are many offset wells producing from a sand found around 2,200 feet in this pool.

Wells in the Riggs Pool are drilled with spudding machines, the cost of drilling being only nominal compared to the rotary drilled and deeper wells in the Graham and Olney Pools. Cost of a well in the Riggs Pool will run about $2,000, while the 2,200-foot and 3,700-foot wells in other areas of the country run from $10,000 to more than $15,000.

High Lease Prices

Since the discovery of Nash & Windfohr's well in the Graham Pool, and the shallow Riggs Field, leases and royalties in the county have advanced rapidly in price. One 40-acre tract in the Riggs Pool brought an exceedingly good price of $175,000, but when some of the best leases have been estimated as good for producing 15 000 bbls. per acre, ultimate recovery, such a price does not seem out of line, although cutting the field to around 1,400 bbls. production per day will have a discouraging effect to those who are anxious to produce their leases and realize an immediate return on their investments.

TANK WAGON CHANGES

(Continued from Page 146)

reduced gasoline service station price 4½ cents at Butte, Mont.

Effective July 4 Standard Oil Co. of New Jersey reduced gasoline service station prices 2 cents at Richmond, Va., and Charlotte, N. C. Same company effective July 7 reduced gasoline tank wagon price 2 cents at Richmond. Same company effective July 8 reduced gasoline tank wagon price 1 cent at Roanoke, Va.

Effective July 11, Standard Oil Co. of California advanced gasoline tank wagon and service station prices throughout entire territory.

Effective July 3 Standard Oil Co. of Louisiana reduced gasoline service station price 2 cents at Chattanooga, Tenn.

TULSA HAS NEW BANK

The Fourth National Bank opened in Tulsa Tuesday, July 15, in the quarters formerly occupied by the Producers National Bank at Fourth Street and South Boulder Avenue. The officers are: J. M. Berry, chairman of the board; W. O. Buck, president; E. I. Newblock, vice president; J. K. Berry, cashier; Warren H. Davis, C. A. Rhea, C. C. Simpson, I. M. Wynn and A. C. Sweeney, assistant cashiers. The directors are J. M. Berry, W. O. Buck, Eugene Lorton, E. J. Franklin, Walter O'Bannon, E. I. Newblock, John M. Wheeler, R. S. Slade, H. P. Glidden, Earl Sneed, Harry H. Diamond, Glenn J. Smith, C. L. Yancey, Johnson D. Hill, Homer F. Wilcox, James M. Gillette and Ralph Talbot.

SHELL RENEWS AGREEMENT

The Shell Oil Co. of California has renewed its contract with refinery and other employes for the year starting September 1. The present contract expires at that time. Working conditions are to remain the same with no changes in wages according to the agreement.

HIGHER DUES ASSESSED AGAINST BRADFORD-ALLEGANY PRODUCERS

PITTSBURGH, Pa., July 12.—Forest Dorn, president of the Forest Oil Co., the largest producer of oil in the northern district of the Pennsylvania Grade oil fields, was re-elected president of the Pennsylvania Grade Crude Oil Association at the annual meeting held here this week. Other officers elected were John Beck, Butler, Pa., vice president; E. M. Lyons, Philadelphia, recording secretary; Samuel Messer, Oil City, treasurer, and R. J. Alexander, Oil City, executive secretary.

Two new directors were named at the meeting, Earl C. Emery of Bradford to replace John P. Herrick of Olean, N. Y., who was reported to be no longer actively engaged in the production of Pennsylvania oil, and John H. McCoy of Marietta, Ohio, to replace A. D. Hufford of Bremen, Ohio, resigned.

All other directors were re-elected as follows: C. L. Suhr, Samuel Messer and E. C. Breene of Oil City; Forest D. Dorn and I. H. Shearer of Bradford; David B. McCalmont of Franklin; D. M. Wilson of Pittsburgh; John A. Beck of Butler; Fred G. Clark of Cleveland; E. M. Lyons of Philadelphia; J. P. Flynn of Sistersville, W. Va.; J. D. Dinsmoore of St. Marys, W. Va.

Secretary's Annual Report

In his annual report Secretary Alexander reviewed the affairs of the association for the year. He told how the wording, "the highest grade oil in the world" had been added to the emblem of the association after lengthy legal procedure and explained how police work was carried on to protect the public from infringement on the emblem. The insignia is now registered in nine foreign countries and arrangements are being made to protect it abroad where the emblem is being used in a few cases without authority.

Emblems similar to that of the organization are being used in the United States and Canada and two men are traveling constantly taking tests to insure that only pure Pennsylvania oil is sold under the emblem. Many samples are tested and many others are sent direct to headquarters by interested marketers. But few cases have been found where the goods were misrepresented and no actual cases have been found where members of the association sold other than pure Pennsylvania oil under their emblem. Marketers are now posting bond in the sum of $1,000 to insure public protection and to guarantee them only 100 per cent pure Pennsylvania oil is used in their product.

The secretary told of educational publicity and research work being carried on by the association and told at length of the national advertising campaign to educate the public to the superior merits of Pennsylvania oil. He stated that the emblem must now be used in connection with the brand of the refiner as in some cases the insignia of the organization had been mistaken for a refinery brand.

He told how research work had been carried on to prove the merits of a superior grade of kerosene oil from pure Pennsylvania crude and stated this plan of action would go into effect at an early date.

Mr. Alexander said that 28 refineries, 788 producers and 608 jobbers are members of the association. There are 200,000 retail outlets selling pure Pennsylvania oil in the United States and Canada, he said, despite the fact that many retail outlets have been purchased or leased by major companies who specify that their product alone must be distributed.

In speaking of the Pennsylvania oil and refining situation as a whole the secretary said that concerted action is needed in order to remedy the situation regarding the low price structure. He asserted that an aggressive, diversified program for the year should be adopted and maintained that the overproduction situation was rapidly being corrected.

Scientific methods of forcing oil from the ground have found wide use in the Bradford Field of western Pennsylvania and the Allegany Field of New York, and in connection with these operations, Secretary Alexander in his report said overproduction had resulted but that a drastic program had been adopted to overcome the situation.

"Notwithstanding a disposition on the part of anyone to criticise the Bradford-Allegany producers for having brought oil to the surface in excess of consumption," said Alexander, "let there be a spirit of due appreciation for the very admirable manner in which the producers in these northern districts have promptly formulated and put into effect a program of drastic conservation in their determination to correct a mistake as quickly as possible. A program of concerted conservation on a smaller scale throughout the balance of the field is receiving due consideration, and when effective, should also contribute materially toward a balance between consumption and production, which must be attained to a marked degree before the law of supply and demand will permit a recovery in the market price of our crude to a living basis.

"Right here it should be borne in mind that had the consumption of Pennsylvania grade crude continued to increase during 1929, at the same rate that it did in 1928 and had there not been a material increase in the Bradford-Allegany Field, there would have been practically no surplus whatever of this raw material at the end of the year. Therefore, up to the point of a normal, necessary surplus, the development in the Bradford-Allegany Field is a blessing. No surplus whatever could be even more disastrous to the Pennsylvania refining industry than overproduction has been to the Pennsylvania grade producing industry."

Experiments at State College

Dr. Merrell R. Fenske, professor of chemical engineering at State College, explained the experiments that are being carried on at the school with Pennsylvania grade crude under appropriations by the State and the Pennsylvania Grade Crude Oil Association. He explained the results of tests with Pennsylvania gasoline and declared that 63 per cent of the production can be treated with Ethyl and sold as a premium gas at a higher price. Experiments are now being started with Pennsylvania lubricating oil and rapid progress is being made.

Dr. Frank C. Whitmore, dean of chemistry at Penn State college, further explained the work being carried on there in oil research.

Forest Dorn opened the discussion as to whether or not the advertising appropriation should be increased and several members stated their opinions. They were all agreed that the association should advertise more heavily and ways and means were discussed.

Mr. Simpson, Bradford producer, spoke in favor of an increased appropriation through additional dues. Samuel Messer of Oil City praised the results obtained from the money spent through advertising and urged more response to the movement by the producers, stating that the refiners were paying in excess of the producers.

David B. McCalmont, Franklin producer, made a motion that the producers pay 5 cents a barrel dues instead of 1 cent and that the refiners pay 2 cents a barrel instead of 1 cent. The motion was not seconded as further discussion took place.

J. P. Flynn, of St. Marys, W. Va., declared that the Bradford producers were responsible for the oversupply of Pennsylvania grade crude and suggested that they pay 2 cents dues, all other producers 2 cents dues and refiners 2 cents dues. He stated that he thought this would prove agreeable to the oil men of West Virginia and would be presented at a meeting to be held in the near future.

H. D. Atha, of Logan, Ohio, stated that he thought the oil men of southeast Ohio would be agreeable to this plan and declared it would be taken up with them.

Earl Embry of Bradford declared that in his opinion the producers of Bradford and Allegany would be willing to try this schedule for one year at least. Mr. Dorn also stated that the Bradford and Allegany producers would follow the suggestion. He declared that a good spirit was being shown in the field and that drastic curtailment had been undertaken to correct overproduction, a 50 per cent reduction in production being undertaken during July and August.

It was then voted that it was the sense of the meeting that effective September 1 the dues of producers in the Bradford and Allegany Fields be increased from 1 to 3 cents a barrel, the dues of other producers from 1 to 2 cents a barrel and the dues of refiners from 1 to 2 cents a barrel. Representatives of the various districts will carry the reports of the proceedings to all refiners and producers in their section and solicit their support. The additional money to be derived is intended mainly for use in the national advertising campaign of the organization.

UNIT OPERATION BILL SIGNED; WILBUR ON WAY TO CALIFORNIA

By Charles E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., July 14.—According to a statement by Secretary Ray Lyman Wilbur of the Department of the Interior, the legislation just signed by the President amending the general leasing act to enable the Government to enter the unit operation plan of single oil pools should result in conservation of oil in fields within the public domain.

Secretary Wilbur is en route to California vested with congressional authority to enter unit operation agreements for the development of the Kettleman Hills oil field.

Secretary Wilbur's Statement

"It is with satisfaction that I can announce to your committee the signing by the President of the bill amending the general leasing act. This constitutes fulfillment of the undertaking set forth in the north dome agreement of July 25, a year ago, 'that the Secretary of the Interior will propose the necessary legislation enabling the Government's participation in the proposed co-operative plan.' I trust your committee may now bring to a conclusion its constructive drafting of the plan of unit development so essential to the interest of both private and public owners of this gas and oil field.

"This official recognition by the legislative and executive branches of our Government of the economic principle of unit operation has already been heralded in the press as marking 'the high point in the progress of public understanding of the problems of the oil industry.' And the response of both houses of Congress to the request for this legislation was most gratifying.

"In its report on the measure, the house committee on the public lands pointed out that the amendments 'affect the workings of the leasing law only as to lessees in a single pool coming voluntarily under a co-operative plan duly approved by the Secretary of the Interior as in the public interest. The requirements of existing or future leases are changed only when desired by such lessees; the new legislation is permissive, providing a desirable flexibility in these requirements, but in no sense are any changes mandatory upon the government lessees.'

Senator Walsh's View

"Speaking in support of the proposed legislation, which he sponsored in the Senate, Senator Walsh of Montana explained that 'the bill contemplates that parties having interests in a particular oil field may unite all of their interests and operate them as a unit, co-operatively, instead of each one operating his own individual property.' And again 'it should be explained that no one will be obliged to come in; there will be no coercion; the bill merely authorizes agreements among the operators and gives to the Secretary of the Interior the power to enter into such agreements on the part of the United States.' The Senate report, presented by Senator Walsh, was similarly explicit on this point: 'No change would be made in any government leases, past or future, from the terms of the general leasing law, except as lessees in a single pool may wish to come under a co-operative plan, duly approved by the Secretary of the Interior as in the public interest.'

"The Senate committee's report referred specifically to the emergency existing at Kettleman Hills and stated that 'a co-operative plan for meeting this waste problem more effectively is now being formulated by a representative committee of operators, but the lessees of the government land cannot enter such a plan without amendment of the general leasing law. Without participation by these government lessees, occupying 30 per cent of the area of this very rich field, no co-operative plan can be operative'."

Senate Committee's Opinion

The broader aspects of the proposed legislation were also commented on by the Senate committee as follows:

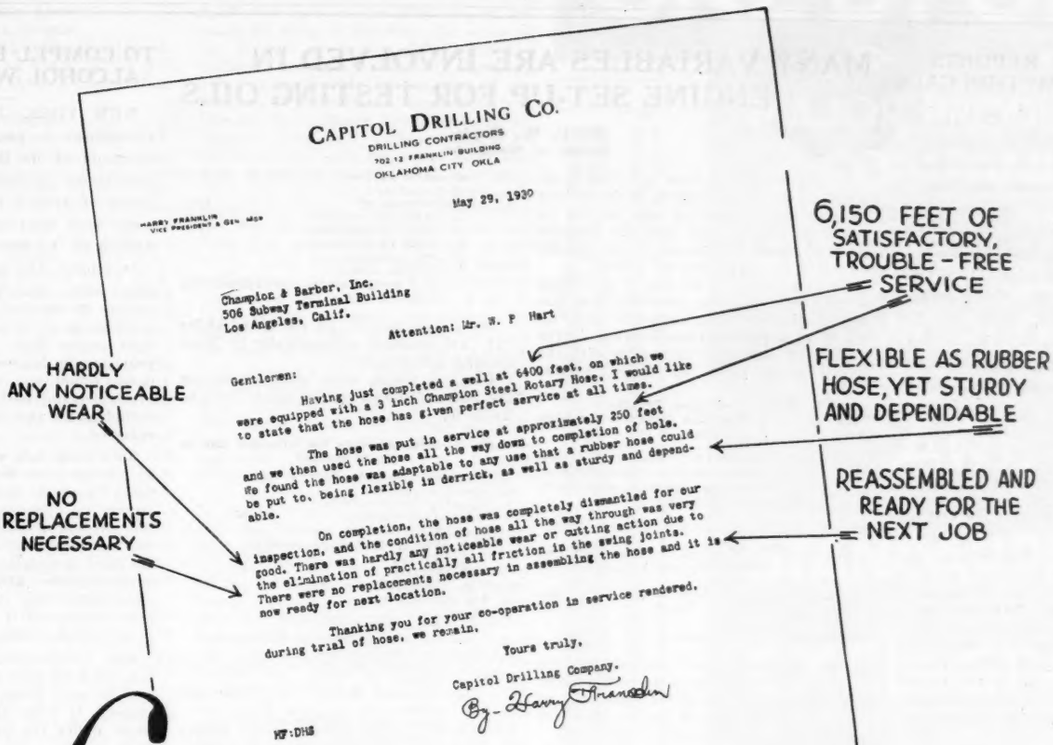
" 'The need of economic regulation of oil and gas field activity is now well recognized as imperative and the Federal Oil Conservation Board has recently, in its report to the President, indorsed the unit operation plan as the most promising method of effectively promoting conservation and economy for the benefit of all parties in interest, private owners and lessees, government owner and lessees, and the general public now so dependent upon products of the oil and gas fields of the country.

" 'The unit operation plan is co-operative and not competitive and the drilling and operating program disregards all property lines within the pool, seeking economy in expenditures and large recovery of resource rather than the usual haste and consequent waste. Necessarily, a longer life of the field being thus promoted, it is essential that the government lessees have the assurance of a tenure beyond 20 years; hence the amendment to Section 17 is absolutely necessary.

" 'Discretionary power is also needed by the Secretary of the Interior in adjusting certain operating requirements of existing law to meet the new conditions of substituting an engineering program of rational well distribution for the present competitive offsetting, which is unduly expensive, but worse than that, almost criminally wasteful. The net result of this more rational plan is expected to be larger profits to the government lessees and larger royalty returns to the Government as lessor.'

"A letter just brought to my attention from one of the best informed public utility executives contains the statement: 'The wastage of natural gas in the Kettleman Hills is appalling and I hope something may be worked out to bring it within more reasonable bounds.' It is this serious condition that has made your local problem one deserving of national concern, and, as stated by the Senate committee on public lands, the wise administration of the government property in the north dome of Kettleman Hills is properly regarded as 'a major item in the conservation policy.'

" 'The action by Congress may be regarded as full indorsement of the continued effort in which the Kettleman Hills interests represented by your committee and public interests represented by the Department of the Interior have joined forces to work out this problem of practical conservation.' "


CAPITOL DRILLING CO.
DRILLING CONTRACTORS
702 12 FRANKLIN BUILDING
OKLAHOMA CITY OKLA
May 29, 1930
HARRY FRANKLIN
VICE PRESIDENT & GEN. MGR
Champion & Barber, Inc.
506 Subway Terminal Building
Los Angeles, Calif.
Attention: Mr. W. P Hart
Gentlemen:
Having just completed a well at 6400 feet, on which we were equipped with a 3 inch Champion Steel Rotary Hose, I would like to state that the hose has given perfect service at all times.
The hose was put in service at approximately 250 feet and we then used the hose all the way down to completion of hole. We found the hose was adaptable to any use that a rubber hose could be put to, being flexible in derrick, as well as sturdy and dependable.
On completion, the hose was completely dismantled for our inspection, and the condition of hose all the way through was very good. There was hardly any noticeable wear or cutting action due to the elimination of practically all friction in the swing joints. There were no replacements necessary in assembling the hose and it is now ready for next location.
Thanking you for your co-operation in service rendered during trial of hose, we remain.
Yours truly,
Capitol Drilling Company.
By Harry Franklin
HF:DHS
6,150 FEET OF SATISFACTORY, TROUBLE-FREE SERVICE
FLEXIBLE AS RUBBER HOSE, YET STURDY AND DEPENDABLE
REASSEMBLED AND READY FOR THE NEXT JOB
HARDLY ANY NOTICEABLE WEAR
NO REPLACEMENTS NECESSARY

Champion

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A CHAMPION FOR WEAR AND DURABILITY.

If you are a user of rotary hose, this letter carries a lot of meaning for you.

Champion hose was developed to meet the need for a hose that could successfully withstand the high pressures of modern deep well drilling, eliminating shut-downs and heavy expense resulting from repairs and replacements due to hose failures. How well it is succeeding is attested by this letter—one of many instances where Champion hose is making it possible to drill fast and economically.

Champion hose hangs right, works right, and is right. For more proof and further interesting information, write us now. Your copy of our new catalog is ready.

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506 Subway Terminal Bldg.
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Telephone MUtual 2756

Mid-Continent Distributors:
BAILEY & BECKER CO.
410 Thompson Bldg., Tulsa, Okla.

Export Distributor:
W. S. FELLOWS
39 Cortlandt St., New York

Of Interest to Sales Departments

GASOLINE TAX REPORTS SHOW CONSUMPTION GAIN

Gasoline consumption in 42 states for the month of April, 1930, as indicated by reports made by wholesalers and dealers in the various states, under provisions of the gasoline tax laws or gasoline inspection laws, totaled 918,649,000 gallons, compared with 804,685,000 gallons in April, 1929, an increase of 113,964,000 gallons, or 14.2 per cent. Daily average consumption for April, 1930, was 30,622,000 gallons compared with a daily average of 26,041,000 gallons in March, 1930, an increase in daily average during April of 17.6 per cent.

Gasoline consumption in these 42 states for the four months ending with April, 1930, amounted to 3,068,247,000 gallons, compared with 2,725,470,000 gallons for the corresponding period of 1929, an increase of 342,777,000 gallons, or 12.6 per cent.

The figures giving the quantity of gasoline sold or offered for sale, as reported under various laws, follow: In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which, if paid, is subsequently refunded. All figures which are subject to revision were compiled by the American Petroleum Institute:

GASOLINE CONSUMPTION BY STATES, APRIL, 1930

	Month of— April, 1930 (Gals.)	April, 1929 (Gals.)
Alabama	15,316,000	15,329,000
Arizona	6,927,000	6,075,000
Arkansas	13,306,000	10,545,000
Colorado	15,977,000	15,531,000
Connecticut	18,470,000	15,198,000
Delaware	3,107,000	2,631,000
District of Columbia	6,778,000	6,036,000
Florida	19,684,000	19,835,000
Georgia	19,130,000	18,207,000
Idaho	5,295,000	3,872,000
Indiana	40,133,000	37,148,000
Iowa	36,246,000	26,718,000
Kansas	32,843,000	26,936,000
Kentucky	14,282,000	13,539,000
Louisiana	16,397,000	15,873,000
Maryland	14,668,000	13,022,000
Massachusetts	45,024,000	38,511,000
Michigan	68,352,000	48,991,000
Minnesota	35,616,000	29,886,000
Mississippi	*12,253,000	12,170,000
Missouri	38,041,000	31,470,000
Nebraska	19,925,000	18,479,000
Nevada	1,500,000	1,193,000
New Hampshire	4,932,000	3,576,000
New Jersey	43,655,000	37,657,000
New Mexico	4,679,000	3,652,000
North Carolina	17,828,000	17,957,000
Ohio	84,934,000	88,101,000
Oklahoma	28,300,000	25,638,000
Oregon	15,355,000	11,502,000
Rhode Island	9,000,000	5,905,000
South Carolina	9,735,000	9,983,000
South Dakota	14,157,000	11,156,000
Tennessee	18,179,000	15,406,000
Texas	64,882,000	63,243,000
Utah	5,847,000	4,381,000
Vermont	3,076,000	1,957,000
Virginia	19,041,000	17,242,000
Washington	25,253,000	19,492,000
West Virginia	11,555,000	10,208,000
Wisconsin	35,801,000	29,654,000
Wyoming	3,170,000	1,780,000
Total	918,649,000	804,685,000
Daily average	30,622,000	26,823,000
Increase over previous year:		
Amount of increase	113,964,000	.....
Percentage increase in daily average	14.2%	.....
Illinois	78,870,000	.....
New York	124,443,000	.....

*Estimated.

LARGE GASOLINE CONTRACT

Warner-Quinlan company has contracted with the Third Avenue Railways system for 5,000,000 gallons of gasoline for delivery over the next 12 months. The gasoline will be used to fuel the fleet of buses which the Third Avenue system will operate.

MANY VARIABLES ARE INVOLVED IN ENGINE SET-UP FOR TESTING OILS

By C. W. Staples
Bureau of Standards*

Investigators have been reluctant to attempt to show the relation of laboratory tests to performance of oils in use by means of engine tests. Oils are complex materials and differences in the results they give in service are not great.

The operation of an engine over long periods involves many variables. For this reason selection of an engine for tests on oils in an important consideration. At the Bureau of Standards an engine with the specifications given in Table 1 was chosen.

Table 1—Engine Details

Type	Commercial designed for high speed truck or bus service.
Cylinders	Six 4"x4¾". Removable block with truncated crankcase construction. Ricardo high compression head.
Power	75 horsepower at 2,500 r.p.m.
Lubrication	Oil pressure to crankshaft and connecting rod bearings.
Bearings	Seven main bearings, middle and rear 3"x3".
Weight	1,100 pounds.

The truncated crankcase construction in which the crankcase sides extend about halfway up the sides of the cylinders and the number and size of the bearings give an indication of the rigid construction.

Conditions of Test

The test conditions adopted are given in Table 2.

Table 2—Standard Test Conditions

Load	45 horsepower (approx.)
Speed	1,200 r.p.m. (approx.)
Duration	2,160,000 revolutions (about 30 hours).
Water Temperature	At the boiling point.

The water is kept at the boiling point because this temperature is easily controlled, crankcase dilution is reduced, and oxidation accelerated.

Reference oils are used for checking the condition of the engine and as standards with which the performance of unknown oils can be compared.

A paraffin base and an asphalt base oil of the same viscosity at 210° F. (88 Saybolt Universal seconds) are used.

Method for Checking Constancy of Engine

Means for checking the condition of the engine are as summarized in Table 3.

Table 3—Means for Assuring a Constant or Known Condition of the Engine

1. Measurement of compression pressure.
2. Check of spark and breaker gaps.
3. Thorough cleaning of the engine.
4. Measurement of cylinder diameters.
5. Use of a known reference oil at least every third test.

Since removal of parts for thorough cleaning involves uncertainty regarding the duplication of engine adjustment when reassembling, a test with the reference oil is followed by flushing only, parts being removed after the test with an unknown oil.

Constant Operating Conditions

Constant or known operating conditions are assured by the methods indicated in Table 4:

Table 4—Means for Assuring Constant or Known Operating Conditions

1. A fan brake for applying the load.
2. A set carburetor throttle.
3. Water at boiling point.
4. Use of a standard fuel.
5. Electric oil heaters.
6. Measurement of humidity.
7. Measurement of barometric pressure.
8. Air cleaner on carburetor.
9. Measurement of total fuel consumption.
10. Automatic ignition shut-off on oil and water supply.
11. Measurement of:
    a. Manifold vacuum.
    b. Rate of fuel flow.
    c. Rate of oil flow.
    d. Oil pressure.
    e. Engine speed.
    f. Ten temperatures throughout the engine.

*Read before Petroleum Technologists of the National Petroleum Association, Bureau of Standards, Washington, D. C.

By special devices, all the items under "11" are recorded automatically by a recording potentiometer.

Changes which have occurred during the test are shown by the items listed in Table 5:

Table 5—Measurements for Changes due to Or in the Oil

1. Engine friction by deceleration.
2. Speed variations.
3. Bearing temperatures.
4. "Carbon" formation:
    a. Total weight.
    b. Per cent naphtha insoluble.
    c. Metals.
    d. Dirt.
    e. "Carbon."
5. Oil consumption.
6. Wear data:
    a. Metal in oil.
    b. Gauging of cylinder diameters.
7. Oil tests (not included above):
    a. Viscosity at 100° F. (before and after).
    b. Viscosity at 210° F. (before and after).
    c. Flash point (before and after).
    d. Conradson carbon residue (before and after).
    e. Demulsibility (before and after).
    f. Ash (before and after).
    g. Acidity (new oil only).
    h. Sligh oxidation (new oil only).
    i. Naphtha insoluble (used oil only).
    j. Chloroform insoluble (used oil only).
    k. Dilution (used oil only).

Numerical results of tests are recorded on a mimeographed form. To date five engine tests have been made on the reference oils. The most noticeable difference in the results was the carbon formation, the asphaltic oil giving a much smaller deposit.

SUCCESS REPORTED IN USE OF ALCOHOL FUEL

Experiments recently made by the Central of Brazil Railway in using alcohol as fuel in its railway motor cars are reported successful. The fuel used, known as azulina, consists of 43 per cent alcohol with an addition of 5 per cent of ethylic ether, extracted from the alcohol itself, and a denaturant.

The consumption of gasoline for these cars was reported as one liter per kilometer; the consumption of the azulina alcohol was 1.1 liters per kilometer. Since alcohol costs half as much as gasoline there is a considerable saving, and a further advantage is claimed in avoiding the deposit left by gasoline.

The main point, however, is that gasoline must be imported, while alcohol can be produced within the country. The Brazilian sugar industry has been suffering losses during the past two years, and will be greatly benefited by the increasing use of alcohol.

The use of alcohol as a substitute for gasoline has been studied for some time in Brazil. In 1927 a fuel known as Usga, made by combining alcohol and ether, both made from sugar cane, with a small admixture of castor oil for lubrication, was introduced into the Pernambuco market for use in internal combustion motors. The general opinion in 1928 was that its use by motor trucks was increasing, while passenger cars were returning to gasoline. Its use has not spread to other districts.

TO COMPEL BLENDING OF ALCOHOL WITH GASOLINE

NEW YORK, July 14.—The French government is preparing to revive the operation of its law providing for the compulsory purchase by petroleum marketers of alcohol from the State to be mixed with their motor fuel for the production of "Carbourant National."

Originally, the law, which was passed about seven years ago, provided that importers be required to purchase and use a minimum of 50 per cent of alcohol for their motor fuel. The proportion was provisionally lowered to 10 per cent when it was found that insufficient alcohol was available, and with available alcohol insufficient for this total, the law was not enforced.

Two years ago, with an overproduction of alcohol from beet root, the law was again invoked, the French government buying up approximately 15,000 tons of this surplus alcohol and unloading it on the oil importers. French wine makers are now complaining of the surplus of approximately 4,000,000 hectoliters of wine which they have on hand and propose to convert it into alcohol for sale to petroleum interests by the state.

The "Carbourant National" mixture has met with little public favor in France and is used principally by trucks and busses. It sells at 30 francs per 100 liters under the price for straight gasoline.

COMMITTEE CHAIRMEN ON ENFORCEMENT OF CODE

Changes in chairmanship and membership of various committees working within the petroleum industry in connection with the national code of practices for marketing refined petroleum products have been announced by Henry M. Dawes, the Pure Oil Co., Chicago, chairman of the American Petroleum Institute's division of refining. The following appointments have been made:

B. I. Graves, general sales manager, Associated Oil Co., San Francisco, Calif., has been appointed a member of the Pacific Coast region code committee, vice L. D. Jurs, Associated Oil Co., resigned. W. M. Wilt, Shell Oil Corp., Reno, Nev., has been appointed chairman of the Nevada code committee, vice A. W. Case, Richfield Oil Co., resigned because of transfer. R. W. Dunn, American Oil Co., Hattiesburg, Miss., has been appointed chairman of the Mississippi code committee, vice R. B. Dodson, Standard Oil Co. of Kentucky, resigned.

Signers of the national code of practices for marketing refined petroleum products now exceed 15,500, it is indicated in the latest list of recent signers prepared by the American Petroleum Institute.

LOCKE, ADVERTISING MANAGER

The Ethyl Gasoline Corp., New York, announced Lucien P. Locke, of the Williams & Cunnyngham Advertising Agency of Chicago, has been appointed advertising manager of the Ethyl Gasoline Corp., New York. Mr. Locke has been engaged in the advertising business ever since finishing at the University of Notre Dame in 1922, excepting one year which he spent in the promotion sales department of the Alemite Manufacturing Corp.

Mr. Locke's headquarters will be in the Chrysler Building, New York City. He is the son of George D. Locke, vice president, Barnsdall Refineries, Inc.

NEW LOCATIONS IN NORTH CENTRAL TEXAS AND WEST TEXAS FIELDS

NORTH CENTRAL AND WEST TEXAS
Week ending June 25
Andrews County

Maer & Staniforth's No. 1 Mrs. A. Meador and others, at the C of the SW of Section 8, Block A-41, Public School Land.

Archer County

Julian Oil Co. and others' No. 1 T. B. Wilson, 450 feet north and 150 feet east of the southwest corner of the north 89.5 acres of T. B. Wilson 179-acre tract out of D.L.&C. Survey, A-1,093. B. Lambert and others' No. 1 W. P. Ferguson, 150 feet south and east of the NW cor. E half of Lot 39, Section 1, S.P.R.R., A-416. E. J. Stump & Co.'s No. 1 P. A. Newell, 900 feet north and 150 feet west of the southeast corner of the south 80 acres of the SE Section 1, S.P.R.R., A-422. R. L. Trout and others' No. 1 H. C. Riggs, 1,320 feet south and 150 feet east of the NW cor. NW, Section 2, S.P.R.R., A-1,102. Arkansas Fuel Oil Co.'s No. 1 A. Llewellyn and others, 3,550 feet north and 1,850 feet east of the southwest corner of A. Llewellyn and others 1,182-acre tract out of John Llewellyn Survey No. 16, A-256. Bridwell Oil Co.'s No. 1 J. H. Turbeville, 150 feet south and 450 feet west of the NE cor., Section 20, Jefferson County School Land, A-24. Burns & Long's No. 1 G. W. Dugan, 1,470 feet south and 750 feet west of the NE cor., Section 2, S.P.R.R., A-1,193. Fain-McGaha Oil Corp.'s No. 1 Portwood-F, 150 feet north and west of the SE cor. S half SE, Section 1,587, T.E.&L. H. H. Frazer and others' No. 1 W. L. King, 1,490 feet north and east of the southwest corner of the east 60 acres of the north 110 acres of the west 260 acres of W. L. King 323-acre tract out of William Henry Survey, A-163.

Golding & Cochran's No. 7 H. E. Brown, 200 feet north and 2,794 feet west of the southeast corner of H. E. Brown 184.8-acre tract, and located in Section 6, B.B.B.&C., A-826. Golding & Cochran's No. 1 J. A. Love, 150 feet south and 450 feet east of the northwest corner of the southwest 40 acres of the northwest 160 acres of Section 2, S.P. R.R., A-815. Golding & Cochran and Dixie Oil Co.'s No. 2 G. A. Lauster, 750 feet north and west of the southeast corner of the south 120 acres in the SW Section 2, S.P.R.R., A-1,237. C. E. Litchfield and others' No. 1 A. S. Fondville, 2,150 feet south and 100 feet east of the northwest corner of John Richards Survey, A-367, being at the center of Block 113, Addition "C," Archer City Townsite. Moran, Golding & Cochran's No. 2 Brown & Smith, 150 feet south and east of the northwest corner of Block 24, G. P. Meade, L. M. Pasture Subdivision. Petroleum Production Co.'s No. 1 George B. Hamilton, 750 feet north and 1,050 feet west of the southeast corner of the south 50 acres of the west 100 acres of Section 6, B.B.B.&C., A-1,266. Vigil Oil & Gas Co.'s No. 10 H. F. Harmel, 150 feet north and 483 feet west of the southeast corner of the north 100 acres of the south 210 acres of Section 2,490, T.E.&L.

Consolidated Oil Co.'s No. 1 L. H. Tarr-B, 150 feet north and west of the SE cor. of the west 50 acres of the north 100 acres of Section 136, Club Ranch Subdivision. Perkins & Cullum's No. 1 C. A. Mangold, 150 feet west and 450 feet south of the NE cor. of Section 5, Mangold Subdivision. Bateman & Dingee and others' No. 1 J. H. Turbeville, 1,219 feet south and 150 feet west of the NE cor. of Section 36, Club Ranch Subdivision. Continental Oil Co.'s No. 1 R. O. Prideaux, 2,419 feet south and 150 feet west of the NE cor. of the E half of the C. Ballinger Survey A-14. Fain-McGaha Oil Corp.'s No. 1 J. L. Anderson, 150 feet north and 450 feet west of the SE cor. of the east 60 acres of Section 22, South Anderson Ranch Subdivision. Fresno Oil & Gifford's No. 1 H. O. Prideaux, 750 feet north and west of the SE cor. of Lot 19, W. J. Fraley Subdivision, John Dorsey Survey A-122. C. W. Gilliland's No. 1 J. F. Rogers-B, 150 feet south and 1,426 feet east of the NW cor. of the north 60 acres of the west 120 acres of the N half of Section 2,407, T.E.&L. Gilliland and others No. 5 G. Symank, 450 feet north and 150 feet east of the SW cor. of the N half of the SW of Section 11, G. P. Meade Subdivision, L. M. Pasture. Golding & Cochran's No. 6 H. E. Brown, 150 feet north and 2,394 feet west of the SE cor. of the H. E. Brown 184.8-acre tract and located in Section 6, B.B.B.&C., A-826. Golding & Cochran's No. 2 B. R. Jeske, 1,273 feet north and 2,094 feet west of the SE cor. of the B. R. Jeske 150-acre tract and located in Section 6, B.B.B.&C., A-826. Golding-Cochran & Dixie Oil Co.'s No. 1 G. A. Lauster, 150 feet north and west of the SE cor. of the west 160 acres of the south 320 acres of Section 2, S.P.R.R., A-1,237. T. F. Hunter's No. 1 A. H. J. Kunkel-C, 852 feet south and 1,888 feet west of the most northerly NE cor. of the G. W. Stell Survey A-381. J. Lincoln and others' No. 1 D. W. Fish, 150 feet south and west of the NE cor. of the W half of Section 85, Club Ranch Subdivision.

C. E. Bailey and others' No. 1-B W. R. Brown, 150 feet south and east of the NW cor., Section 10, A.T.N.C.L. Survey. Barnsdall Oil Corp.'s No. 16-A T. B. Wilson, 150 feet north and 600 feet west of the southeast corner of its 200-acre Lease "A" and located in the D.L.&C. Survey. Barnsdall Oil and Hedrick-Camp's No. 1 Parkey, 150 feet south and 250 feet west of the NE cor. NE NW, Section 11, Block 3, H.&T.C. Survey. L. T. Burns' No. 2-R L. F. Wilson, 1,777 feet south and 725 feet west of the NE cor., Lot 1, Section 108, A.T.N.C.L. Survey. E. J. Stump's No. 1 L. Huff, 150 feet north and west of the SE cor. of the north 50 acres of the L. Huff 80-acre tract out of Section 7, Denton County School Land, League 3, A-117. P. Trahan and others' No. 1 E. J. Netherton, 150 feet north and east of the SW cor. of the north 80 acres of the west 160 acres of the Thomas B. Bell Survey No. 111, A-31. P. Trahan and others' No. 1 G. T. Netherton, 150 feet south and east of the NW cor. SE SE, Section 1, S.P.R.R., A-411. L. T. Burns' No. 1 L. T. Burns, 1,717 feet south and 150 feet east of the NW cor., Section 51, Club Ranch Subdivision. L. T. Burns' No. 1-B H. F. Harmel, 150 feet south and 783 feet west of the NE cor. of the south 110 acres of Section 2,490, T.E.& L. Survey, being 150 feet south and east of the NW cor. of his 20-acre Lease "B." Carter & Wright's No. 2 S. Wilson estate, 2,500 feet north and 1,850 feet east of the SW cor., Section 2, S.P.R.R., A-859. C. W. Clark's No. 1 J. W. Cross, 150 feet south and 160 feet east of the NW cor. of the south 10.6 acres of the J. W. Cross tract out of Section 2,491, T.E.&L. Survey. F. P. Cullum's No. 1-B Falls County School Land, 150 feet south and 543 feet west of the NE cor. E half, Section 14, Falls County School Land, A-130. H. C. Donohoo's No. 1 H. L. and J. F. Ward, 1,800 feet north and 700 feet west of the most southerly SE cor. of the H. L. and J. F. Ward 553.5-acre tract out of the R. R. Rainey Survey No. A-354. Fain-McGaha Oil Corp.'s No. 1-B G. B. Hamilton, 150 feet south and west of the NE cor., Section 1, Crawford Subdivision. Heydrick & Hickman's No. 1 Abercrombie & Taylor, 150 feet south and 1,900 feet east of the NW cor., Section 13, Club Ranch Subdivision. J. Lincoln and others' No. 1 T. V. Carr, 150 feet south and 850 feet east of the NW cor. of the T. V. Carr 225-acre tract out of Section 2,437, T.E.&L. Survey. J. H. Massie's No. 1 L. Echols, 150 feet south and 750 feet west of the NE cor. of the north 40 acres of the L. Echols 124-acre tract out of Section 2,418, T.E. &L. Survey. J. H. Massie's No. 12 J. T. Richardson, 750 feet north and 500 feet west of the SE cor. N half of the west 40 acres of Section 14, South Anderson Ranch Subdivision. Maxon and

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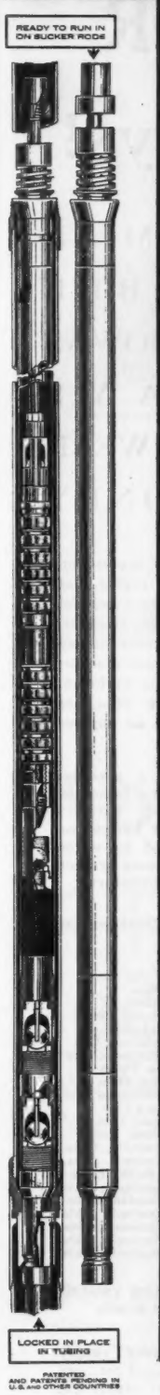

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Panhandle Refining Co.'s No. 1 C. E. Graham, 450 feet south and east of the NW cor. of the John Weaver Survey No. A-670. J. E. Parker and others' No. 1 W. R. Dupriest, 1,265 feet south and 744 feet west of the NE cor., Section 2,490, T.E.&L. Survey, being 29 feet south and 744 feet west of the NE cor. of the south five acres of the north 110 acres of Section 2,490. Perkins & Cullum's No. 1 Falls County School Land (R. Tipkin), 150 feet north and 53 feet west of the SE cor. of the east 25 acres of Section 11, Falls County School Land, A-130. Petroleum Producers Co. and others' No. 1 G. R. Campbell, 150 feet north and east of the SW cor., Section 4, Crawford Subdivision. Silk & Chenault's No. 1 W. L. Andrews, 150 feet south and east of the NW cor. of the G. C. Frarley Survey No. A-129. Vigil Oil & Gas Co.'s No. 9 H. F. Harmel, 150 feet north and 783 feet west of the SE cor. of the north 100 acres of the south 210 acres of Section 2,490, T.E.&L. Survey.

L. T. Burns' No. 1 J. H. Turbeville-H, 150 feet south and 450 feet east of the NW cor. of the N half of the SW of the J. W. Cain Survey No. 169, A-69. Shappell Oil Co.'s No. 1 Kemp & Kempner-E, 150 feet south and east of the NW cor. of the NW of Block 76, K.W.V.F.L. J. B. Baker, Jr.'s No. 2 J. H. Turbeville, 1,470 feet south and 450 feet west of the NE cor. of Section 21, Club Ranch Subdivision. Bridwell Oil Co.'s No. 4 Falls County School Land, 910 feet north and 420 feet east of the SW cor. of the west 46 acres of Section 8, Falls County School Land, A-130. L. T. Burns' No. 1 A. Pastusek, 150 feet south and west of the NE cor. of Section 17, G. P. Meade Subdivision, L. M. Pasture. R. I. Carter's No. 1 S. Covington, 150 feet north and 425 feet east of the SW cor. of the north 20 acres of the west 36 acres of the S. Covington 74.5-acre tract out of the John Richards Survey A-367. Consolidated Oil Co.'s No. 2 H. F. Harmel-B, 1,132 feet north and 1,207 feet east of the SW cor. of Section 3,480, T.E.&L., being 158 feet south and 1,207 feet east of the NW cor. of their 60-acre lease "B." Fain-McGaha Oil Corp.'s No. 2 J. L. Anderson-C, 810 feet north and 750 feet west of the SE cor. of the east 60 acres of Section 22, South Anderson Ranch Subdivision. Flower-Barkley and others' No. 1 F. Brezina and others, 150 feet south and 700 feet west of the NE cor. of the SE of Section 2,410, T.E.&L. Golding-Cochran's No. 3 B. R. Jeske, 1,273 feet north and 2,394 feet west of the SE cor. of the B. R. Jeske 150-acre tract and located in the B.B.B.&C. Survey No. 6, A-826. Golding-Cochran and others' No. 1 J. Winters and others, 150 feet south and east of the NW cor. of the W 100 acres of Section 65, Club Ranch Subdivision. T. F. Hunter and others' No. 1 A. J. Love, 750 feet south and 150 feet west of the NE cor. of A. J. Lowe 105-acre tract out of Section 2,402, T.E. &L. Junker & Perkins' No. 1 W. H. Cliff, 150 feet north and west of the SE cor. of the south 40 acres of the W half of Section 18, Club Ranch Subdivision. King & Hays' No. 1 Morehead estate, 1,850 feet south and 1,900 feet west of the NE cor. of John Richards Survey, A-367, being 150 feet south and 250 feet east of the NW cor. of Morehead estate tract.

Looney & Hutcheson's No. 1 G. G. Dickey, 873 feet north and 1,356 feet west of the SE cor. of Section 140, Club Ranch Subdivision. J. H. Massie's No. 2 L. Echols, 150 feet south and 450 feet west of the NE cor. of the north 40 acres of Lloyd Echols 124.5-acre tract out of Section 2,418, T.E.&L. A. P. Nicholson's No. 1 J. C. Stinnett, 1,050 feet south and 750 feet east of the NW cor. of the W. L. Herring Survey No. 19, A-168. George L. Pace's No. 2 F. C. Green, 150 feet south and 950 feet east of the NW cor. of F. C. Green 1,290-acre tract out of Joseph Levins Survey, A-259. George L. Pace and others' No. 1 Gussie Munroe and others, 2,200 feet south and 2,400 feet west of the NE cor. of John Richards Survey, A-367, midway east and west and 150 feet south of the north line of Block 125, town of Archer City.

Reno Oil Co.'s No. 1 W. M. Cave and others, 150 feet north and 450 feet east of the SW cor. of the south 40 acres of the W. M. Cave and others' 139-acre tract out of the J. Ostane Survey A-333. W. W. Silk and Charles Chenault's No. 1 C. E. Graham, 150 feet south and 2,562 feet east of the NW cor. of the north 240 acres of C. E. Graham 628.29-acre tract out of Boling C. North Survey, A-327. Wilson & Russell's No. 12 H. O. Prideaux, 800 feet south and 1,425 feet east of the NW cor. of their 55-acre lease out of the A. Rohus Survey, A-1,126. Same company's No. 14 Prideaux, 450 feet south and 800 feet west of the NE cor. of their 55-acre lease out of the A. Rohus Survey A-1,126.

Baylor County

Grisham & Barnsdall Oil Co.'s No. 5 W. H. Portwood-Harry, 1,384 feet north and 150 feet east of the SW cor. SE, Section 1,281, T.E.&L.

W. W. Silk's No. 1-A W. H. Portwood, 150 feet north and east of the SW cor. N half, Section 3,141, T.E.&L. Survey.

Consolidated Oil Co. and others' No. 19 W. H. Portwood, 1,741 feet north and 150 feet west of the SE cor. of the SW of Section 1,281, T.E.&L.

Brown County

C. E. Bonwell and others' No. 1 W. K. Cabler, 630 feet south and 650 feet west of the northeast corner of W. K. Cabler 205-acre tract out of F. Wardzeiski Survey No. 324.

G. Metcalf and others' No. 1 J. C. Beck, 1,138 feet south and 511 feet west of the NE cor. of the T.&N.O. Sur. No. 43. L. C. Riordan and others' No. 1 J. A. Loyd, 500 feet north and 150 feet east of the SW cor. of the J. M. Higgins Survey No. 37, A-530.

S. B. Herring's No. 13 J. H. Kellar, 750 feet south and 1,500 feet west of the NE cor. of the J. H. Kellar 179.5-acre tract out of the Robert Mitchell Survey No. 141. R. C. McCarter and others' No. 1 W. N. Favor, 150 feet south and west of the NW cor. of the W. S. McClanahan 70.33-acre tract out of the Hrs. William English Survey No. 791 and located on the W. N. Favor 200-acre tract. H. P. Evans and others' No. 1 Mrs. L. A. Vardeman, 450 feet south and east of the NW cor. of the Mrs. L. A. Vardeman 53.5-acre tract out of Section 9, H.T.&B. Survey. E. L. Smith Oil Co.'s No. 1 W. L. Pugh estate, 543 feet south and 750 feet west of the NE cor. of the W. L. Pugh estate 157-acre tract out of the M. Little Survey No. 40.

Duffy and others' No. 1 W. E. Hill, 150 feet south and east of the NW cor. of the south 81.5 acres of the NE of Section 41, H.T.&B. Kewanee Oil & Gas Co.'s No. 27 Roy Hickman, 450 feet north and east of the SW cor. of their lease out of John McGloin Survey No. 801. A. A. Elms and others' No. 1 S. M. Parks, 1,000 feet southeast of the NW line and 320 feet northeast of the SW line of S. M. Parks 195.6-acre tract out of John S. Thom Survey, A-897.

Callahan County

Union Oil of Nevada's No. 3 M. Alexander, 150 feet south and 550 feet west of the NE cor. NW SE, Section 23, E.T.R.R.

D Beams and others' No. 11 N. Jackson-D, 330 feet south and east of the NW cor. of the SE of the SE of Section 21, E.T.R.R. Colgin & Johnson's No. 2 A. Cutbirth and others, 150 feet north and west of the SE cor. of the N half of the SE of the W. Scurlock Survey No. 211. McCarter and others' No. 1 R. P. Odom, 1,300 feet south and 1,875 feet west of the NE cor. of the P. H. Cammans Survey No. 214, being 150 feet north and west of the SE cor. of Lot 8.

Goodrum and others' No. 2 R. D. Williams, 150 feet south and 750 feet east of the NW cor. of the NE of Section 26, Deaf & Dumb Asylum Land. Grass Roots Oil Co.'s No. 1 P. P. Bond, 1,350 feet north and 150 feet east of the SW cor. of P. P. Bond 137.5-acre tract out of T. H. Brown Survey No. 218. Roy Guffy and others' No. 1 N. M. George, 450 feet north and east of the SW cor. of Section 71, Bayland Orphan Asylum Land. McGowan & Richardson's No. 1 J. B. Cut-

birth, 300 feet south and 600 feet west of the NE cor. of the SW of the SE of M. Scurlock Survey No. 207. Star Drilling Co.'s No. 1 E. L. Finley-B, 450 feet south and 150 feet east of the NW cor. of Section 76, Bayland Orphan Asylum Land.

Clay County

J. F. Merrick and others' No. 4 C. W. Byers & Co., 1,467 feet south and 450 feet west of the NE cor. of Section 15, Byers Brothers Subdivision.

Mid-Continent Holding Corp.'s No. 1 H. Boddy, 5,808 feet south and 3,765 feet east of the NW cor. of H. Boddy 1,476-acre tract out of E. Humphries Survey, A-195. Merrick & Goldsmith's No. 1 W. E. Givens and others, 1,350 feet north and 1,300 feet west of the SE cor. of Section 15, Byers Brothers Subdivision, and located in Block 49, town of Petrolia.

Coleman County

Tidal Oil Co.'s No. 6 Stewardson, 1,760 feet north and 150 feet west of the SE cor., Section 91, E.T.R.R.

Prairie Oil & Gas Co.'s No. 1 J. Kellar and others, 150 feet north and 700 feet east of the SW cor. of Section 9, A. White Survey No. 161. Vacuum Oil Co. and others' No. 7 L. Weaver, 220 feet south and 275 feet east of the NW cor. of Lot 16, A. Gabel Survey No. 271. Marquette Oil Co.'s No. 8 G. W. Garrett, 1,950 feet north and 1,000 feet east of the SW cor. of Section 14, North Subdivision, M. Martinez Survey No. 751. McCamey and others No. 1 W. B. McClure, 150 feet north and west of the SE cor. of the W. B. McClure 240-acre tract out of the J. B. Beall Survey No. 301.

Atlantic Oil Producing Co. and others' No. 1 W. M. McCulloch, 150 feet south and 1,050 feet east of the NW cor. of the south 80 acres of the north 188 acres of the W. M. McCulloch 268-acre tract out of the M. Lappe Survey No. 744. Lloyd Oil Corp.'s No. 12 R. G. Bartholomew, 2,165 feet north and 150 feet east of the SW cor. of the William Farris Survey No. 279.

T. Brown and others' No. 1 Frank Golson, 2,213 feet south and 649 feet east of the NW cor. of Isaac Harris Survey No. 164, A-381. George Lamb and others No. 1 M. A. Phillips, 1,172 feet south and 1,197 feet west of the NE cor. of Lot No. 3, R. Perry Survey No. 95.

Cooke County

Danciger Oil & Refining Co.'s No. 2 Tony Truebenbach, 150 feet north and 200 feet east of the NW cor. of the H. Fleitman 55-acre tract and located on the Tony Truebenbach 603-acre tract out of the P. Davidson Survey A-337 and the J. Clark Survey A-194. United Production Co.'s No. 1 A. J. Dennis, 2,378 feet north and 150 feet east of the SW cor. of the L. Raney Survey A-1,682, being 150 feet south and east of the NW cor. of its 20-acre lease.

Danciger Oil & Refining and Staniforth's No. 1 B. Inglish, 150 feet south and 182 feet east of the NW cor. of the south 139 acres of the B. Inglish 320-acre tract out of the S.P.R.R. Survey No. 25, A-1,217. Seitz-Comegys & Seitz' No. 1 Field & Bowers, 150 feet south and east of the NW cor. of the Fields & Bowers 60-acre tract out of the J. Banning Survey No. A-137.

Crockett County

California Co.'s No. 3 J. M. Shannon (Lease 3), 331 feet north and 1,831 feet west of the SE cor. of its lease out of Section 42, T.C.R.R. Survey.

Crane County

Church and others' No. 3 University, 330 feet north and 2,310 feet east of the SW cor., Section 34, Block 30, University Land.

Tidal Oil Co.'s No. 2-C University, 2,310 feet north and west of the SE cor. of Section 34, Block 30, University Land. Same company's No. 3-C University, 2,310 feet north and 1,650 feet west of the SE cor. of Section 34, Block 30, University Land.

Sun Oil Co.'s No. 1 First State Bank, Hillsboro, Tex., at the C of Section 6, J. H. Gibson Survey. Gulf Production Co.'s No. 2 McElroy-B, 1,442 feet south and 330 feet west of the most easterly NE cor. of G. P. Co.'s lease out of Section 216, Block F, C.C.S.D.&R.G.N.G., being 660 feet west of the Gulf Production Co.'s No. 75 J. T. McElroy.

Eastland County

Jim Amyx and others' No. 1 C. U. Connellee-B, 290 feet south and 200 feet west of the northeast corner of the west 120 acres of the east 200 acres of the north 394 acres of the east 1,140 acres of Nancy Ussury Survey. Mike Michael and others' No. 1 W. H. Hughes, 150 feet north and west of the SE cor., Section 17, Block 2, E.T.R.R.

Lobaugh & Holden's No. 1 Buzan heirs, 180 feet north and 700 feet east of the SW cor. of Section 30, Block 4, H.&T.C. Southern Oil & Producing Co. and others' No. 2 J. E. Chesley-A, 300 feet south of the middle of the north line of the E 100 acres of the south 260 acres of Section 384, S.P.R.R.

Chestnut & Smith's No. 2 J. Alexander and others, 200 feet south and east of the NW cor. SW, Section 62, Block 4, H.&T.C. Survey. Chestnut & Smith's No. 1 G. W. Waters, 200 feet north and west of the SE cor. NE, Section 78, Block 4, H.&T.C. Survey.

Cranfill & Reynolds, Inc.'s No. 1 J. E. Coop, 150 feet north and 1,050 feet west of the SE cor. of Lot 14, W. Van Norman Survey. Hoffman & Page Co.'s No. 7 O. E. Lyerla, 492 feet north and 1,338 feet east of the SW cor. of C. E. Lyerla 77.6-acre tract out of the N half of the SW of Section 27, Block 2, H.&T.C. L. S. G. Co.'s No. 3 C. E. Allen, 660 feet south and east of the NW cor. of John Foster Survey. L. Teatsorth and others' No. 4 V. Harbin, 550 feet south and west of the NE cor. of their lease out of the E half of the NE of Section 9, H.&T.C. Survey, Block 4. Hickory Oil & Gas Co.'s T. M. Terry, at the center of the east 50 acres of the south 100 acres of the E half of Section 77, H.&T.C. Survey, Block 4.

Erath County

Texas Pacific Coal & Oil Co.'s No. 2 G. M. Allen, 1,930 feet north and 850 feet east of the SW cor. of Section 24, Indianola R.R. Survey.

Ector County

R. R. Penn's No. 1 Kloh & Rumsey, 330 feet south and 2,310 feet west of the NE cor., Section 19, Block 4, T.&P., T-3-S.

Simms Petroleum Co. and others' No. 3 University, 2,310 feet north and 330 feet east of the SW cor. of Section 1, Block 35, University Land. Gulf Production Co.'s No. 4-A State, 330 feet north and 1,320 feet west of SE cor. N half S half, Section 2, Block 35, University Land.

The Texas Company and others' No. 8 W. E. Connell, 330 feet north and 440 feet west of the SE cor. of Section 2, Block B-16, Public School Land.

Fisher County

Cranfill & Reynolds' No. 1 J. E. Cooper and others, 330 feet north and 990 feet east of the SW cor. of Section 198, B.B.B.&C.

Glasscock County

Humble Oil & Refining Co.'s No. 1 Arrington, 2,310 feet south and 990 feet east of the NW cor., Section 22, T-2-S, Block 33, T.&P. E. L. Smith Oil Co.'s No. 1 R. C. Coffee, 2,310 feet north and 990 feet east of the SW cor., Section 22, T-2-S, Block 33, T.&P.

Simms Petroleum Co.'s No. 6 R. C. Coffee, 2,310 feet north and west of the SE cor. of Section 22, Block 23, Township 2s, T.&P.

Grayson County

C. A. Tucker and others' No. 2 Thorn & Handy, 1,890 feet north and 930 feet east of the southwest corner of the south 188.5 acres of Thorn & Handy 1,063-acre tract out of Samuel Stewart Survey, A-1,069.

C. E. Litchfield and others' No. 1 Coleman & Peters, 150 feet north and 450 feet east of the SW cor. of the Coleman & Peters 30-acre tract out of the William Wright Survey A-1,311.

Irion County

C. Cromwell and others' No. 3 J. M. Nutt, 904 feet south and 1,162 feet east of the NW cor. of Section 6, Gonzales

Spread G & B Pipe Sealing Compound on the male threads only, after making certain that all threads are absolutely clean. Just this will insure an impenetrable seal for the joint.

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OGJ 7-17 Gray

County School Land. Same company's No. 1 F. Tankersley, 150 feet south and 210 feet east of the NW cor. E half, Section 1,230, G.C.&S.F. Survey. F. E. Webb and others' No. 1 J. M. Nutt, 150 feet north and 1,162 feet east of the SW cor. of Section 5, Gonzales County School Land.

Haskell County

Roeser & Pendleton and others' No. 1 Reynolds Cattle Co., 220 feet south and east of the most westerly NW cor. of the S. Suggs Survey No. 2, A-1,041.

Howard County

Merrick & Lamb's No. 14 H. R. Clay, 1,570 feet north and 1,236 feet west of the SE cor., Section 126, Block 29, W.&N.W.R.R.

Jack County

C. W. Boller and others' No. 5 J. A. Raley, 2,344 feet north and 324 feet east of the SW cor. of the J. A. Raley 333-acre tract out of the I. Hughson Survey, A-256. Brazos River Oil & Gas Co.'s No. 2 R. R. Clayton, 998 feet north and 650 feet east of the SW cor. of the J. Mathews Survey, A-398. Same company's No. 1 J. A. Jones estate, 400 feet south and east of the NW cor. of Section 7, S.P.R.R., A-551. Magnolia Petroleum Co.'s No. 1 G. M. Kinder, 330 feet south and east of the NW cor. S half, Section 1, W.C.R.R., A-907.

Republic Production Co.'s No. 1-A A. E. Enlow, 329 feet north and 324 feet west of the SE cor. of the A. E. Enlow 100-acre tract out of the I. Hughson Survey A-256.

Jones County

Gibson & Johnson's No. 1 W. R. Hudspeth, 1,125 feet south and 483 feet west of the NE cor. of Section 22, E. Miles Survey A-259.

Shaheen and Prairie Oil & Gas Co.'s No. 1 S. W. King, 6,750 feet south and 150 feet west of the NE cor. of the M. Bueno Survey No. 197, A-14.

Loving County

Eppenauer and others' No. 1 J. G. Allen, 2,310 feet southwest of the northeast line and 2,310 feet southeast of the northwest line of Section 90, Block 1, W.&N.W.R.R.

California Co.'s No. 2 Reagan & McElvain and others, 440 feet southeast of the NW line and 440 feet northeast of the SW line of Section 84, Block 1, W.&N.W.R.R.

Mitchell County

E. Morrison and others No. 1 J. N. Poe and others, 660 feet south and 1,980 feet west of the NE cor. of Section 8, Block 27, T.&P.

Menard County

W. C. Barnett and others' No. 3 Callan City Co., 300 feet north and east of the SW cor., Section 1, B.S.&F.

Montague County

Bridwell Oil Co.'s No. 10 Mrs. M. H. Salmon-A, 6,250 feet north and 3,100 feet east of the southwest corner of F. Robertson Survey, A-620, being 150 feet north and 450 feet west of the southeast corner of its 124-acre lease "A".

Bridwell Oil Co.'s No. 6 J. S. Dennis, 450 feet south and 1,350 feet west of the NE cor. of the J. S. Dennis 383-acre tract out of the F. Robertson Survey A-620. Same company's No. 1 H. F. Wilton and others, 1,980 feet north and 175 feet east of the SW cor. of the T. Scott Survey A-661. Carter & Rycade Oil Corp.'s No. 13 R. W. Cunningham and others, 150 feet north and east of the SW cor. of their 40-acre lease and located in the J. N. Hodges Survey A-1,160. H. E. Crenshaw and others' No. 1 Mrs. A. B. Hinton, 5,100 feet south and 150 feet west of the NE cor. of the A. Coats Survey A-129, being 150 feet south and west of the NE cor. of their 40-acre lease. The Texas Company's No. 3 Mrs. M. H. Salmon (Henley), 450 feet north and 150 feet east of the SW cor. of their 20-acre lease out of the F. Robertson Survey A-620.

Barnsdall Oil Co.'s No. 6 R. W. Cunningham and others, 150 feet south and east of the NW cor. of its 22.5-acre lease and located in the J. N. Hodges Survey, A-1,160.

Palo Pinto County

Atlantic Oil Producing Co. and others' No. 2 S. J. Stuart and others, 1,470 feet north and east of the SW cor. of Section 50, Block 4, T.&P. Lone Star Gas Co.'s No. 1 F. M. Watson, 1,980 feet south and 1,780 feet east of the NW cor. of Section 13, Block 3, T.&P. B. Wickens and others' No. 2 E. J. Hart, 2,425 feet north and 5,400 feet east of the SW cor. of the A. Ashworth Survey A-1.

Christie Brothers' No. 1 Allen & Richie, 200 feet north and east of the SW cor. of the T. J. Bradford Survey, A-1,628. Root & Rhodes' No. 1 M. B. Costello, 450 feet southwest of the northeast line and 1,300 feet northwest of the southeast line of the M. B. Costello 116.5-acre tract out of the R. R. Williams Survey, A-896. Texas Pacific Coal & Oil Co.'s No. 1 Texas Pacific Coal & Oil Co., 3,800 feet north and 2,150 feet west of the SE cor. of the A. Ashworth Survey, A-1.

Pecos County

Continental Oil Co.'s No. 7 University-A, 1,650 feet south and 330 feet east of the NW cor., Section 6, Block 17, University Land. Dixie Oil Co.'s No. 2 Tippett, 150 feet south and east of the middle of the south line of Section 539, Arnold & Barrett Survey, A-3, and located in Section 61, Block 194, G.C.& S.F. Henshaw Brothers and others' No. 3 University, 2,310 feet south and 330 feet west of the NE cor., Section 24, Block 18, University Land. G. A. Henshaw, Jr., Inc.'s No. 1 University, 1,650 feet north and 990 feet west of the SE cor., Section 32, Block 16, University. McCarty Oil Co.'s No. 2 A. A. Gray, 2,370 feet south and 40 feet east of the NW cor., Section 591, G.C.&S.F., A-3,-010. Plymouth Oil Co.'s No. 4 F. A. Perry, 300 feet south and 420 feet west of the NE cor., Section 14, Block 194, G.C.&S.F. Humble Oil & Refining Co.'s No. 1 Mrs. C. L. Thomson, 1,980 feet south and west of the NE cor., Section 96, G C.&S.F., Block "OW." Pure Oil Co.'s No. 1 J. H. Harrison, 2,310 feet south and 330 feet east of the NW cor., Section 203, Block 3, T.&P.

California Co.'s No. 21 I. G. Yates, Lease 1, 1,406 feet south and 463 feet west of the NE cor. of Section 35, Block 194, G.C.&S.F., and located on the I. G. Yates land. Same company's No. 22 I. G. Yates, Lease 1, 840 feet south and 469 feet west of the NE cor. of Section 35, Block 194, G.C.&S.F. and located on the I. G. Yates land. Cardinal Oil Co.'s No. 9 Mrs. F. E. Forborg, 750 feet north and 150 feet west of the SE cor. of Section 539, Arnold & Barrett Survey A-3. Mid-Kansas Oil & Gas Co.'s No. 9 Mrs. M. A. Smith, 250 feet north and east of the most westerly SW cor. of Section 31, Block 194, G.C.&S.F. O. J. Perren's No. 1 T. S. Jackson (Pure), 200 feet southeast of the northwest line and 200 feet northeast of the southwest line of Section 28, Block 3, H.&T.C. Transcontinental Oil Co. and Arkansas Fuel Oil Co.'s No. 2 F. A. Perry, 330 feet south and west of the NE cor. of Section 6, Block Z, T.C.R.R.

Buell-Hagan and Independent Oil & Gas Co.'s No. 1-A Pecos Valley Oil Co., 150 feet southeast of the northwest line and 1,470 feet southwest of the northeast line of Section 22, Block 10, H.& G.N. Survey. Cardinal Oil Co.'s No. 1 J. H. Tippett-Kirby, 2,787 feet north and 1,864 feet east of the SW cor. of Section 40, Block 194, G.C.&S.F. Survey. Same company's No. 3 J. H. Tippett-Kirby, 1,050 feet north and 548 feet east of the SW cor. E half W half, Section 40, Block 194, G.C.&S.F. Survey. Pure Oil Co.'s No. 1 J. H. Harrison, 2,310 feet south and 330 feet east of the NW cor. of Section 203, Block 3, T.&P. Survey.

Southern Crude Oil Producing Co.'s No. 8 J. H. Tippett-A, 450 feet south and 900 feet west of the most easterly NE cor. of their lease "A" out of Section 61, Block 194, G.C.&S.F. Same company's No. 9 J. H. Tippett-A, 450 feet south and 1,160 feet west of the most easterly NE cor. of their lease "A" out of Section 61, Block 194, G.C.&S.F. Same company's No. 10 J. H. Tippett-A, 450 feet south and 1,460 feet west of the most easterly NE cor. of their lease "A" out of Section 61, Block 194, G.C. &S.F. California Co.'s No. 1 E. J.

Fromme, 330 feet southwest of the NE line and 330 feet southeast of the NW line of Section 106, Block 10, H.&G.N.

Reeves County

May & Milton's No. 1 J. B. Ellis, 300 feet south and east of the NW cor., Section 21, Block 72, Public School Land.

Runnels County

Charles Dutton and others' No. 1 G. W. Dean, 5,475 feet southwest of the northeast line and 1,048 feet southeast of the northwest line of the G. W. Dean 213.7-acre tract out of J. Heil Survey No. 419.

Schleicher County

J. D. Wesner and others' No. 1 W. R. Nicks, 2,310 feet south and 2,362 feet west of the NE cor. of Section 77, Block LL, T.C.R.R.

Stephens County

G. S. H. Cooze's No. 1 Douglass & Brown, 1,980 feet north of Brazos River and 240 feet west of the east line of B. F. Wood Survey, A-1,244.

Clover Leaf Mining Co.'s No. 2 R. L. Glasscock, 600 feet north and 1,250 feet west of the SE cor. of the SW of Section 80, Block 4, T.&P. W. J. Rhodes' No. 2 R. W. West, 450 feet north and 330 feet east of the SW cor. of Section 1,417, T.E.&L.

Lone Star Gas Co.'s No. 1 F. M. Tomlin, 1,671 feet south and 1,531 feet west of the NE cor. of Section 461, S.P.R.R.

Shackelford County

Big States Oil Co.'s No. 17 Russ-Webb, 150 feet north and 660 feet west of the SE cor. NE, Section 27, Block 11, T.&P. Hart & Gist Production Co.'s No. 1 Mrs. S. Sammons, 450 feet north and 150 feet east of the SW cor. E half SE, Section 21, Blind Asylum Land. King Royalty Co.'s No. 3 H. J. Brewster, 526 feet south and 150 feet east of the NW cor. SW, Section 48, Blind Asylum Land. T. K. Simmons and others' No. 5 B. C. Harvey, 1,020 feet south and 300 feet west of the NE cor. SW, Section 5, Block 14, T.&P.

Carter Development Co.'s No. 1 J. H. Nail, 1,320 feet south and 660 feet east of the NW cor. of the W half of the NW of Section 135, Block 10, E.T.R.R. Gilman & McMurray's No. 2 E. A. Jeter, 178 feet south and 450 feet east of the NW cor. of Section 15, Block 11, T.&P. R.R. W. B. Holder's No. 1 B. Brooks, 150 feet north and west of the SE cor. of the SW of Section 55, Blind Asylum Land. G. P. Mitchem and others' No. 1 J. H. Nail, 150 feet south and west of the NE cor. of the SW of Section 76, Block 10, E.T.R.R. Roeser & Pendleton's No. 2 Dawson and others (Section 202), 220 feet south and west of the NE cor. of the NW of Section 202, Block 10, E.T.R.R.

Humble Oil & Refining Co.'s No. 1 S. Lazarus, 700 feet north and 2,000 feet east of the SW cor. of Section 78, Block 13, T.&P. Survey. C. Marton and others' No. 4 L. G. Davis, 1,170 feet south and east of the NW cor. of Section 41, Block 12, T.&P. Survey. Roeser & Pendleton's No. 3 Dawson and others (Section 202), 150 feet north and west of the SE cor. NE NE, Section 202, Block 10, E.T.R.R. Survey. Wilson Drilling Co.'s No. 1 Morris & Buie, 150 feet south and west of the NE cor. SE, Section 171, Block 10, E.T.R.R. Survey.

Roeser & Pendleton's No. 4 Dawson and others, Section 202, 220 feet south and east of the NW cor. of the NE of Section 202, Block 10, E.T.R.R.

Throckmorton County

M. L. Hays' No. 1 G. C. Wright, 250 feet south and 450 feet west of the NE cor. of the SE of Section 279, B.B.B.&C.

C. P. Burton's No. 1-A W. H. Portwood, 150 feet north and east of the SW cor. of Section 1,575, T.E.&L. Survey. Junker & Perkins' No. 1 J. Marcell, 150 feet north and west of the SE cor. NE, Section 2,155, T.E.&L. Survey. McKay and others' No. 1 N. Timmons, 150 feet north and 450 feet west of the SE cor. NE, Section 2,190, T.E.&L. Survey. N. A. Moore and others' No. 1 J. O. Crump, 150 feet north and east of the SW cor. of the west 40 acres of the north 150 acres of Section 962, T.E.&L. Survey.

Upton County

Eppenauer Drilling Co.'s No. 2 W. A. Chaney, 1,147 feet south and 1,650 feet east of the NW cor. of Section 18, Block 3, M.K.&T. Survey. Same company's No. 3 Chaney, 1,147 feet south and 990 feet east of the NW cor. of Section 18, Block 3, M.K.&T. Survey.

Gulf Producing Co.'s No. 5 Ed S. Hughes Co.'s Tract B, 2,970 feet south and 1,338 feet east of the NW cor. of Gulf Producing Co.'s 200-acre lease out of William Teer Survey No. 4, A-806.

Ward County

Gulf Producing Co.'s No. 10 G. W. O'Brien and others, 322 feet north and 360 feet east of the SW cor. of Section 6, Block F, G.&M.M.B.&A. Same company's No. 12 G. W. O'Brien and others, 330 feet north and 1,655 feet east of the SW cor. Section 6, Block F, G.&M.M.B. & A. Sur. S. Richardson and others' No. 3 G. W. O'Brien and others, 330 feet south and 1,655 feet east of the SW cor. of Section 5, Block F, G.&M.M.B.&A.

A. O. P. Co. & R. R. Penn's No. 1 Pecos Mercantile Co.-B, 990 feet southeast of the NW line and 2,310 feet southwest of the NE line of Section 16, Block 34, H.&T.C.

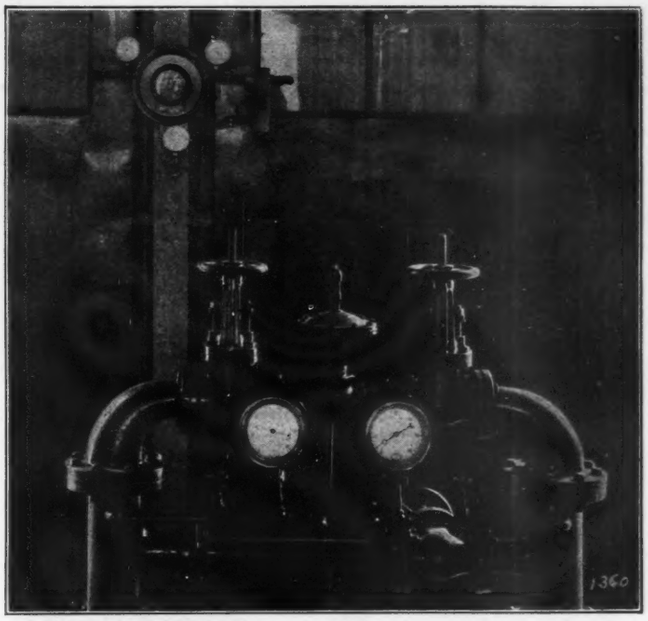
Magnolia Petroleum Co.'s No. 1 George Sealy, 2,310 feet north and east of the SW cor., Section 46, Block F, G.&M. M.B.&A. Survey.

Wichita County

F. Ard and others' No. 1 W. J. Logan and others, 150 feet north and west of the southeast corner of the west 40 acres of the south 80 acres of Block 35, Kemp's Wichita Valley Lands. Arkansas Fuel Oil Co.'s No. 44 Kemp & Kempner-B, 1,200 feet south and 400 feet west of the SE cor., Section 81, and located in Section 82, Kemp's Wichita Valley Lands. George J. Proctor's No. 1 W. B. Honaker, 1,050 feet south and 150 feet east of the northwest corner of C.&M. Survey No. 1, A-379. Lambert & Trout's No. 4 W. W. Overbey, 850 feet north and 1,500 feet east of the southwest corner of John M. Sharp Survey, A-262, being 150 feet north and 815 feet west of the most easterly northeast corner of their 86-acre lease. T. F. Hunter's No. 13 Waggoner Brothers-C, 150 feet north and 1,500 feet east of the southwest corner of Lot No. 1, and located in Lot No. 2, H. George Survey, A-454. L. P. Hammond and T. J. Waggoner's No. 1 Waggoner Brothers, 150 feet south and east of the northwest of Lot No. 9, H. George Survey, A-454. Roden & Benton's No. 1 J. Cabe, 500 feet north and 150 feet east of the southwest corner of J. Cabe 60-acre tract out of James Cole Survey, A-37. United Producers Co.'s No. 16 W. L. Hodges-A, 477 feet south and 812 feet east of the northwest corner of Lot No. 9, W. L. Hodges Subdivision, out of H.T.&B. Survey No. 1, A-139.

Arkansas Fuel Oil Co.'s No. 35 Kemp & Kempner-A, 900 feet south and 800 feet west of the SE cor. of Block 81, K.W.V.L., and located in Block 82. R. R. Clark and others' No. 1 W. P. and J. F. Bickley-A, 3,025 feet south and 2,075 feet east of the NW cor. of Section 2, J. F. Torrey & Co. Survey A-598. Comac Drilling & Prairie Oil & Gas Co.'s No. 1 R. A. Neal-A, 886 feet north and 1,498 feet west of the SE cor. of the D.L.&C. Co. Survey A-640 and located in the J. M. Sharp Survey A-262, being 180 feet south and 135 feet east of the NW cor. of their 40-acre lease "A." Lambert & Trout's No. 3 W. W. Overby, 150 feet south and 775 feet west of the most southerly NE cor. of the W. W. Overby tract out of the J. M. Sharp Survey A-262. The Texas Company's No. 383 W. T. Waggoner, 936 feet south and 2,310 feet west of the NW cor. of Section 13, H.T.&B., A-137, and located in Section 3, G.C.&S.F., A-530. Same company's No. 384 W. T. Waggoner, 3,413 feet north and 998 feet east of the SW cor. of Section 13, H.T.&B., A-137.

Moran Drilling Co.'s No. 1 W. H. Chilson, 150 feet north and east of the SW cor. E half, Section 5, Denton County School Land, League 4, A-417. Bridwell & Mayfield's No. 5 T. A. Womack, 965 feet south and 150 feet west of the NE cor. of Section 2, G.C.&S.F. Survey, A-796. Staley & Wynne's No. 2 R. A. Neale-Richey, 1,177 feet north and



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2,083 feet west of the SE cor. of the D.L.&C. Co. Survey, A-640, and located in the J. M. Sharp Survey, A-262, being 150 feet north and 450 feet west of the SE cor. of their 16-acre lease. Turman Oil Co.'s No. 19 Waggoner, 250 feet south and 990 feet west of the NE cor. of Section 148, H.&T.C. Survey, A-784. Walton & Blair's No. 2 W. B. Honaker, 450 feet south and 150 feet east of the NW cor. of Section 1, C.&M. Survey, A-379.

Arkansas Fuel Oil Co.'s No. 43 Kemp & Kempner-B, 200 feet south and 500 feet west of the most northerly NE cor. of their lease "B" out of Block 82, K.W.V.F.L. T. F. Hunter's No. 12 J. L. and T. J. Waggoner-C, 150 feet north and 1,004 feet east of the SW cor. of Lot No. 1, H. George Survey, A-454.

The Texas Company's No. 381 Waggoner, 722 feet south and 1,650 feet west of the NW cor., Section 13, H.T.&B. Survey, A-137, and located in Section 3, G.C.&S.F. Survey, A-530. Walton & Blair's No. 1 W. B. Honaker, 150 feet south and east of the NW cor., Section 1, C.&M. Survey, A-379.

Wilbarger County

Phillips Petroleum Co.'s No. 1 Waggoner-J, 220 feet north and east of SW cor. SW NW, Section 41, Block 4, H. &T.C. Same company's No. 2 Waggoner-V, 330 feet north and west of the SE cor. NW NE, Section 44, Block 4, H.&T.C. Same company's No. 4 Waggoner-GG, 330 feet south and east of the NW cor. SE SE, Section 43, Block 4, H.&T.C. Waggoner Refining Co.'s No. 15 Waggoner-J, 255 feet south and 205 feet west of the NE cor. NW NE, Section 25, Block 4, H.&T.C.

Empire Gas & Fuel Co.'s No. 25 W. T. Waggoner-A, 770 feet north and 967 feet east of the SW cor. of the NW of Section 32, Block 4, H.&T.C. Same company's No. 20 W. T. Waggoner-C, 205 feet south and 530 feet west of the NE cor. of the SE of the NW of Section 25, Block 4, H.&T.C. Hi-Land Oil Co.'s No. 1 C. Zipperle, 150 feet south and west of the NE cor. of Section 80, H.& T.C. Survey, Block 14. Lido Oil Co.'s No. 6 W. T. Waggoner-C, 1,120 feet north and 460 feet east of the SW cor. of Section 50, H.&T.C.R.R. Co., Block 2. Prairie Oil & Gas Co.'s No. 10 W. T. Waggoner-B, 1,154 feet south and 1,159 feet west of the NE cor. of SW of Section 43, Block 4, H.&T.C.R.R. Sur. The Texas Company's No. 385 W. T. Waggoner, 990 feet south and 382 feet east of the NW cor. of Section 5, Block 13, H.&T.C.

W. B. Hamilton's No. 1 W. T. Waggoner, 810 feet north and 3,090 feet east of the SW cor. of Section 4, H.&G.N. Survey, A-907. Independent Oil & Gas Co. and Moran Drilling Co.'s No. 3 Waggoner, 200 feet south and east of the NW cor. of Section 30, Block 4, H.&T.C. Survey.

Davis Oil Co.'s No. 10 W. T. Waggoner, 150 feet south and 750 feet east of the NW cor. of their lease out of Section 35, Block 2, H.&T.C.

Winkler County

Southern Crude Oil Purchasing Co.'s No. 8 T. G. Hendrick, Township 88n, 1,850 feet north and 1,650 feet east of the SW cor. of Section 28, Block 26, School Land.

Young County

Bonner Co.'s No. 9 J. W. Davis, 900 feet north and 750 feet east of the southwest corner of their 60-acre lease out of Section 1,395, T.E.&L. W. S. Brazelton and others' No. 3 J. F. Larimore, 750 feet north and 150 feet west of the SE cor. E half NE, Section 2,246, T. E.&L. Bullington, Lee & Pendleton's No. 8 J. L. Boone, 570 feet north and 330 feet east of the SW cor. NW NE, Section 1, B.B.B.&C., A-34.

Cooper & Hamilton's No. 1 J. H. Crain, 750 feet south and 1,050 feet west of the NE cor., Section 169, T.E.&L. A. O. Disney's No. 1 Belknap Coal Co., 534 feet north and 1,650 feet east of the SW cor., Section 6, T.E.&L., being 534 feet north and 150 feet west of the most southerly southeast corner of their lease. W. R. Duke and others' No. 1 J. E. Brown, 150 feet south and west of the northeast corner of the north 40 acres of the east 80 acres of the south 160 acres of Section 1,368, T.E.&L. Elliott & Alexander's No. 1 S. R. Jeffery, 1,440 feet north and 150 feet west of the SE cor. SE, Section 43, T.E.&L. V. L. Grisham's No. 1 G. M. Proffitt, 150 feet south and 1,866 feet west of the most easterly northeast corner of E. Crockett Survey, A-58. R. H. Helm's No. 1 G. M. Proffitt, 150 feet north and 1,156 feet west of the most easterly southeast corner of E. Crockett Survey, A-58. Holbrook & Woods' No. 1 E. C. Keith, 150 feet south and east of the NW cor. S half NW, Section 67, T.E.&L. Independent Oil & Gas Co.'s No. 4 J. F. Larimore, 765 feet south and 150 feet west of the NE cor. S half, Section 2,246, T.E.&L. Independent Oil & Gas Co.'s No. 6 J. F. Larimore, 463 feet north and 150 feet west of the SE cor., Section 2,246, T.E.&L. King Royalty Co. and Heydrick's No. 3 J. D. Carpenter, 150 feet south and 450 feet west of the NE cor. S half SW, Section 164, T.E.&L. Panhandle Refining Co.'s No. 3 B. H. Larimore and others, 1,050 feet south and 150 feet east of the NW cor. E half SW, Section 2,247, T.E.&L. Rosenbaum and others' No. 1 Belknap Coal Co., 150 feet south and 750 feet west of the NE cor. S half SE, Section 2,250, T.E.&L. H. F. Smith and others' No. 1 Smith & Graves, 150 feet south and east of the NW cor., Section 161, T.E.&L. Smith-Archer Oil Co.'s No. 1 A. C. Watson, 150 feet north and 936 feet east of the SW cor., Section 249, T.E.&L. Westheimer & Daube's No. 7 B. H. Larimore and others, 450 feet north and 150 feet east of the SW cor. S half NW, Section 2,247, T.E.&L. Baker & Pardue's No. 1 H. M. Donnell, 50 feet north and 120 feet west of the SE cor., Section 3, S.P.R.R., Block 4, A-1,754.

Akin & Rayzor's No. 1 J. A. Winkler, 150 feet south and east of the NW cor. of the south 35 acres of the J. A. Winkler 100-acre tract and located in the J. Poitevent Survey No. 1, A-226. Bonner Oil Co.'s No. 7 J. W. Davis, 150 feet north and 177 feet west of the SE cor. of the west 60 acres of the S half of Section 1,395, T.E.&L. Same company's No. 8 J. W. Davis, 440 feet north and 510 feet east of the SW cor. of Section 1,395, T.E.&L. C. W. Carey and others' No. 5 J. D. Lowe, 150 feet south and 1,350 feet east of the NW cor. of the S half of the NW of Section 250, T.E.&L. C. W. Clark's No. 1 D. Hargroves, 400 feet south and 150 feet east of the NW cor. of the west 100 acres of the south 160 acres of Section 283, T.E.&L. Fain-McGaha Oil Corp's No. 1 C. W. Dunn, 570 feet north and 900 feet west of the SE cor. of Section 157, T.E.&L., being 150 feet south and east of the NW cor. of Block 5, and located on Lot 6, Bloodworth Second Addition, Town of Olney.

Featherstone and others' No. 1 J. T. Russell, 150 feet south and 1,282 feet west of the NE cor. of Section 156, T.E. &L., being 150 feet south and east of the NW cor. of Block 5 and located on Lot 3, Groves First Addition, Town of Olney. T. F. Hunter and others' No. 1 J. M. Bloodworth-B, 2,844 feet south and 1,716 feet east of the NW cor. of Section 157, T.E.&L., being 150 feet north and west of the SE cor. of their 20-acre lease "B." T. F. Hunter and others' No. 2 J. M. Bloodworth-B, 2,652 feet south and 1,416 feet east of the NW cor. of Section 157, T.E.&L., being 150 feet south and 450 feet west of the NE cor. of their 20-acre lease "B." Hunter Oil Corp.'s No. 6 H. Benson-A, 1,008 feet south and 750 feet west of the NE cor. of the NW of Section 157, T.E.&L. Same corporation's No. 3 J. M. Bloodworth-A, 2,352 feet south and 1,416 feet east of the NW cor. of Section 157, T.E. &L., being 150 feet north and 450 feet west of the SE cor. of its 35-acre lease "A." Jacob Oil & Gas Co.'s No. 1 T. F. Kindley, 260 feet south and 330 feet west of the NE cor. of the east 60 acres of the N half of Section 432, T.E. &L. Ray & Featherstone and others' No. 1 Atchley, 210 feet north and 1,734 feet west of the SE cor. of Section 157, T.E. &L., being 150 feet south and east of the

NW cor. of Block 9, Bloodworth First Addition, Town of Olney. Shappell Oil Co.'s No. 7 Mrs. D. Garrett-A, 450 feet north and 150 feet west of the SE cor. of the east 32.5 acres of the N half of Section 1,487, T.E.&L. Same company's No. 8 Mrs. D. Garrett-A, 1,090 feet north and 450 feet west of the SE cor. of the east 32.5 acres of the N half of Section 1,487, T.E.&L. Same company's No. 4 Mrs. D. Garrett-B, 707 feet north and 1,194 feet east of the SW cor. of the west 100 acres of the north 132.5 acres of Section 1,487, T.E.&L. States Oil Corp.'s No. 1 Mrs. W. T. McBee, 800 feet north and 300 feet east of the SW cor. of Section 451, T.E.&L. Staley-Wynne & Kruger's No. 1 J. M. Bloodworth, 3,144 feet south and 1,716 feet east of the NW cor. of Section 157, T.E.&L., being 150 feet south and west of the NE cor. of their 10-acre lease. Shaw & Knox' No. 5 M. R. Jarnigan, 200 feet northwest of the southeast line of the M. R. Jarnigan 43-acre tract out of the J. Conner Survey A-57 and 150 feet east of the Brazos River.

Alexander & Snoddy's No. 1 N. Wilborn, 150 feet north and east of the SW cor. of the north 100 acres of the east 160 acres of Section 1,588, T.E.&L. Survey. G. W. Cooper and others' No. 4 Junker & Benson, 150 feet north and 750 feet west of the SE cor. of their 20-acre lease out of Section 157, T.E.&L. Survey. L. H. Cullum's No. 1 S. M. J. Benson, midway east and west and 150 feet north of the south line of Section 1,477, T.E.&L. Survey. C. H. Featherstone and others' No. 1 School Block, 3,507 feet south and 1,716 feet east of the NW cor. of Section 157, T.E.&L. Survey, being 153 feet south and 150 feet west of the NE cor. of Block 2, Bloodworth Third Addition, town of Olney. Flowers & Barkley's No. 1 P. K. Deats, 150 feet south and east of the NW cor. of the south 40 acres of the west 80 acres E half, Section 1,591, T. E.&L. Survey. G. B. Hamilton's No. 2 J. K. Thomas, 1,600 feet north and 1,230 feet west of the SE cor. of Section 156, T.E.&L. Survey, and located on Lot 3, Block 1, John W. Groves First Addition, town of Olney. T. F. Hunter and others' No. 3-B J. M. Bloodworth, 2,844 feet south and 1,348 feet east of the NW cor. of Section 157, T.E.&L. Survey, being 150 feet north and 518 feet west of the SE cor. of their 20-acre Lease "B." F. P. Hynes' No. 1 C. D. Bailey, 150 feet south and east of the NW cor. of the east 60 acres of the north 120 acres of Section 204, T.E.&L. Survey. Jacob Oil & Gas Co.'s No. 1 W. L. Holder, 200 feet south and east of the NW cor. of Section 30, T.E.&L. Survey. King Roy Co. and Heydrick's No. 2 W. B. Bailey, 450 feet south and 150 feet west of the NE cor. of the north 40 acres W half, Section 165, T.E.&L. Survey. Nimrod Oil Co.'s No. 5 W. D. Hall, 450 feet south and west of the NE cor. of the north 60 acres of the south 100 acres of the W. D. Hall 186-acre tract out of Section 167, T.E.&L. Survey. Panhandle Refining Co.'s No. 1 R. H. Larimore and others, 150 feet south and east of the NW cor. of the east 40 acres of the SW of Section 2,247, T.E.&L. Survey. Panhandle Refining Co. and others' No. 5 J. D. Lowe, 470 feet north and 1,200 feet east of the SW cor. N half NW, Section 250, T.E.&L. Survey. Preston Brothers' No. 1 J. E. Pringle, 150 feet south and west of the NE cor. of the north 40 acres E half, Section 216, T.E. &L. Survey. Remington & Nelson's No. 1 Robert Bullock, 150 feet south and 1,094 feet west of the NE cor. of Section 262, T.E.&L. Survey. E. R. Riggs' No. 5 B. H. Larimore and others, 150 feet south and 450 feet east of the NW cor. W half SW, Section 2,247, T.E.&L. Survey. E. R. Riggs' No. 6 B. H. Larimore and others, 450 feet south and east of the NW cor. W half SW, Section 2,247, T.E.&L. Survey. Riner & Omohundro's No. 5 E. C. Keith, 150 feet north and 750 feet west of the SE cor. of the north 20 acres of the east 60 acres of the south 160 acres of Section 268, T.E.&L. Survey. Robertson Drilling Co.'s No. 1 R. C. Howard, 1,100 feet south and 150 feet west of the NE cor. of Section 1,366, T.E.&L. Survey. Staley-Wynne & Kruger's No. 2 J. M. Bloodworth, 3,144 feet south and 1,416 feet east of the NW cor. of Section 157, T.E. &L. Survey, being 150 feet south and 450 feet west of the NE cor. of their 10-acre lease. H. R. Stastny's No. 1 N. Wilson, 150 feet north and 1,171 feet east of the SW cor. of Section 1,460, T.E.&L. Survey. Wootten & Reed's No. 1 M. E. McBrayer and others, 900 feet south and 150 feet east of the NW cor. of Section 1,907, T.E.&L. Survey.

W. S. Brazelton and others' No. 1 J. F. Larimore, 150 feet north and west of the SE cor. of the NE of Section 2,246, T.E.&L. Same company's No. 2 Larimore, 750 feet north and 150 feet west of the SE cor. of the E half of the NE of Section 2,246, T.E.&L. Bridwell Oil Co.'s No. 1 S. A. Stowe, 1,050 feet south and 150 feet east of the NW cor. of Section 228, T.E.&L. W. R. Fullerton's No. 1 I. M. Kirkland, 1,050 feet south and west of the NE cor. of the NE of Section 2,250, T.E.&L. W. D. Gillette's No. 1 Belknap Coal Co., 150 feet north and east of the SW cor. of Section 10, T.E.&L. W. B. Hamilton's No. 2 B. H. Larimore and wife, 150 feet north and east of the SW cor. of the S half of the NW of Section 2,247, T.E.&L. Same company's No. 3 B. H. Larimore and wife, 150 feet north and 750 feet east of the SW cor. of the S half of the NW of Section 2,247, T.E.&L. Same company's No. 4 B. H. Larimore and wife, 450 feet north and east of the SW cor. of the S half of the NW of Section 2,247, T.E.&L. Same company's No. 5 Larimore and wife, 150 feet north and 1,050 feet east of the SW cor. of the S half of the NW of Section 2,247, T.E.&L. Same company's No. 6 Larimore and wife, 150 feet south and east of the NW cor. of the S half of the NW of Section 2,247, T.E.&L. T. F. Hunter's No. 1 C. Moore and others, 150 feet south and 105 feet east of the NW cor. of the west 18 acres of the E half of Section 239, T.E.&L. T. F. Hunter and others No. 4 Bloodworth-B, 150 feet north and 818 feet west of the SE cor. of their lease "B" out of Section 157, T.E.&L. T. P. Hynes' No. 1 Mrs. E. I. McClatchey, 785 feet north and 450 feet west of the SE cor. of the S half of the SE of Section 172, T.E.&L. Independent Oil & Gas Co.'s No. 1 J. F. Larimore, 150 feet north and west of the SE cor. of the S half of Section 2,246, T.E.&L. Same company's No. 2 Larimore, 150 feet south and west of the NE cor. of the S half of Section 2,246, T.E.&L. Same company's No. 3 Larimore, 450 feet south and 150 feet west of the NE cor. of the S half of Section 2,246, T.E.&L. Charles J. Kliner's No. 1 Belknap Coal Co., 150 feet south and east of the NW cor. of the south 40 acres of the SW of Section 2,248, T.E.&L.

Kliner & Riggs' No. 1 J. F. Larimore, 150 feet north and west of the SE cor. of the west 80 acres of the east 120 acres of the N half of Section 2,246, T.E.&L. George Mollenkoph's No. 1 B. Larimore and wife, 150 feet north and east of the SW cor. of the NE of Section 2,247, T.E.&L. George Mollenkoph's No. 2 Larimore and wife, 790 feet north and 150 feet east of the SW cor. of the NE of Section 2,247, T.E.&L. Panhandle Refining Co.'s No. 2 Larimore and wife, 450 feet south and 150 feet feet east of the NW cor. of the E half of the SW of Section 2,247, T.E.&L. Same company's No. 6 J. D. Lowe, 470 feet north and 900 feet east of the SW cor. of the N half of the NW of Section 250, T.E.&L. Perkins & Cullum's No. 1 W. Logan and others, 150 feet south and 410 feet west of the NE cor. of the south 20 acres of the W. J. Logan and others' tract out of Section 156, T.E.&L. Rathke Oil Co.'s No. 1 E. W. Hunt, 500 feet south and west of the NE cor. of the E half of the N half of Section 240, T.E.&L. E. Remington's No. 5 E. M. Remington, 150 feet south and east of the NW cor. of the W half of the NW of Section 2,248, T.E.&L. Remington & Terrell's No. 2 J. and C. Graham, 150 feet south and 450 feet west of the NE cor. of the J. and C. Graham 200-acre tract out of

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Section 2,249, T.E.&L. E. R. Riggs' No. 7 B. H. Larimore and wife, 150 feet south and east of the NW cor. of the W half of the SW of Section 2,247, T.E.&L. E. R. Riggs' No. 8 B. H. Larimore and wife, 450 feet south and 150 feet east of the NW cor. of the W half of the SW of Section 2,247, T.E.&L. E. R. Riggs' No. 9 Larimore and wife, 450 feet south and 150 feet west of the NE cor. of the W half of the SW of Section 2,247, T.E.&L. E. R. Riggs' No. 10 B. H. Larimore and wife, 150 feet south and west of the NE cor. of the W half of the SW of Section 2,247, T.E.&L.

Shappell Oil Co.'s No. 1 E. P. Tatum, 150 feet north and east of the SW cor. of the north 52.5 acres of the east 105 acres of the E. P. Tatum 265-acre tract out of Section 1,908, T.E.&L. C. P. Sheldon's No. 1 J. J. Perkins, 150 feet north and 680 feet west of the SE cor. of J. J. Jerkins 208.6-acre tract out of Section 22, T.E.&L. O. H. Simpson's No. 1 Larimore and others, 150 feet north and east of the SW cor. of the N half of the NW of Section 2,247, T.E.&L. M. E. Smith and others' No. 1 J. F. Barnett and others, 450 feet south and west of the NE cor. of the E half of the SE of Section 2,245, T.E.&L. Western Production Co.'s No. 2 Dr. G. B. Hamilton, 540 feet south and 450 feet west of the NE cor. of the Dr. G. B. Hamilton 163-acre tract out of Section 3,401, T.E.&L. Willis & Terrell's No. 1 J. F. Barnett and others, 150 feet north and west of the SE cor. of the W half of the SE of Section 2,245, T.E.&L. Willis & Terrell's No. 1 J. M. Kirkland, 750 feet south and 450 feet east of the NW cor. of the J. M. Kirkland 120-acre tract out of Section 2,249, T.E.&L. Wooten & Reed's No. 1 J. L. Jordan, 1,285 feet north and 150 feet west of the SE cor. of Section 1,903, T.E.&L. Connor Sons & Cloughey's No. 1 H. M. Ford, 600 feet north and east of the SW cor. of the south 115 acres of the north 160 acres of W. T. Carter Survey, A-62. Same company's No. 2 H. M. Ford, 1,000 feet north and 600 feet east of the SW cor. of the south 115 acres of the north 160 acres of W. T. Carter Survey, A-62. Same company's No. 3 Ford, 600 feet north and 1,000 feet east of the SW cor. of the south 115 acres of the north 160 acres of W. T. Carter Survey, A-62. Henderson Oil Co.'s No. 1 W. L. McNeil estate (Young), 1,600 feet southeast of the NW line and 250 feet southwest of the NE line of Section 4, B.B.B.&C., A-28.

CENTRAL WEST FIELDS

(Continued from Page 70)

Epple, Section 8, same township, was a duster at 900 feet.

Louisville Cement Co. drilled a dry hole on the Perry Byrum just at the south edge of the town of Milltown, in Whisky Run Township, Crawford County, at 1,237 feet, and the hole is being abandoned.

Morgan County is not developing as the leaseholders would like, as two dry holes have been found since the last report from that county, being the Petroleum Exploration Co.'s No. 1 T. J. Ratts and No. 1 E. S. Langford farms. Same company also drilled a dry hole on the Claud E. Kinser farm, in Monroe County.

The Eureka-Indiana Oil & Gas Corp.'s test on the David Farnsley, in Taylor Township, Harrison County, in the extreme southern part of Indiana, showed a volume of 800,000 feet of gas in the shale at a depth of 200 feet.

It is reported the Wood Oil Co. drilled a dry hole in a test on an unknown lease, in Section 28, Franklin Township, Floyd County, in Indiana.

Roger E. Williams and others are drilling a third well on the John Backer farm, Section 13, Clark Township, Perry County, and the Perry Oil & Gas Co. is getting down to a depth where something worth while should be found, if anything exists, on the August Brannacher farm, east of Troy.

ILLINOIS

Very little is being done in drilling in any part of Illinois, there being but three new wells reported completed. Porterville Oil Co.'s No. 1, 660 feet from the north line of the Otto Fought farm, NW, Section 36, Prairie Township, Crawford County, is rated as good for only one-half barrel at 1,000 feet, while Watson and others' second test, 1,120 feet from the north line and 200 feet from the west line of the Martin Newlin farm, NW, Section 13, same township, pumped an initial of 10 bbls. from 875 feet. Same parties are drilling on the J. F. Johnson, Section 12, same township.

The Shiloh Oil Co.'s test near the southeast corner of the Clark and Morehead farm, SW, Section 17, Bridgeport Township, Lawrence County, pumped 10 bbls. initial at 1,396 feet. The Ohio Oil Co. abandoned No. 3 Effie Eshelman farm, Section 33, Lawrence Township, same county. In Dennison Township, the Ohio Oil Co. is drilling No. 11 E. J. Ridgley farm, Section 12, and No. 48 L. A. Buchannan farm, Section 2, same township.

Petroleum Exploration Co. is drilling on the O. D. McFarling farm, west of Casey, in Cumberland County, in hope of extending the one-time producing area in Union Township, same county, where shallow production from 500 to 800 feet showed wells that started with initial production around 500 bbls. or better.

KENTUCKY-TENNESSEE

(Continued from Page 70)

000 feet in No. 1 on the Ira Lloyd farm, the gas being found in the Barlow sand. Same firm found a fair gas well in a second test on the Crow & Connor farm, in the Howard Pool, and a dry hole in a second test on the J. P. Morgan, in the Adaburg area.

Leeper Oil Co. and others' No. 2 on the Blackerby farm, in the Maxwell Pool, is reported at 35 bbls. initial.

H. C. Smith Co. drilled in a fair gas well in No. 2 on the Isaac Finley farm, in the Barlow sand from 687-800 feet.

Daviess County

The best completion reported from any section of Daviess County, is the well of Doctor Sirman on the Homer Crossler farm, in the Red Hill Pool, said to show from 75 to 100 bbls. initial from the Stray sand, and numerous new locations are being staked out in the immediate area.

In the Cane Run Field, Hupp and French's No. 4 well, 200 feet from the south line and 600 feet from the west line of the W. T. Ware 80 acres, pumped 40 bbls. the first 24 hours.

Ben T. Wright and others' No. 4 on the Goldie Ambrose north 23 acres, in the Cane Run area, near the southwest corner of the farm, pumped 25 bbls. initially.

In the Utica Field the Cumberland Petroleum Co. drilled a dry hole in No. 2 on the J. A. Baird farm, and another in No. 5 on the B. Mackey farm, same pool.

In the Chapman Pool, in the Cane Run area, the Eastern Gulf Oil Co.'s test on the Christian farm, is rated good for 5 bbls., and the same company's No. 5 on the Rose B. Tyler farm, in the Red Hill Pool, good for 25 bbls.

Hupp, Duff and McMahan has what is reported a 40-bbl. initial production in No. 3 on the W. G. Hayden No. 2 farm, in the Maxwell Pool.

Scattered Completions

In the Bowling Green Field, 4 miles west of the city, P. M. Perkins' test on his own farm, in Warren County, is reported good for 5 bbls. at 586 feet.

In the Calhoun Field, south of Liva, in McLean County, Miller and Damron's No. 2 on the Cox heirs farm, is reported good for 65 bbls. the first 24 hours.

In the Niagara Pool, in Henderson County, the Henderson Syndicate's second test on the R. M. Nunn, produced 400,000 feet of gas. P. E. Eichenour's test on the Henry Watson farm, same pool, was a dry hole, and the Niagara Oil & Gas Co.'s No. 1 Joe Slively farm, showed a volume of 600,000 feet of gas.

In Webster County, H. C. Wilson and others' test on the Asia Feast farm, in the Sebree Pool, produced 300,000 feet of gas.

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in Muhlenberg County that Ellis, Young and others have concluded to give up any further drilling in No. 1 on the Willis Allen farm, which is at 3,400 feet and no showing. The casing is being pulled and the hole being abandoned.

A dry hole was drilled by the Petroleum Exploration Co. on the W. W. Rawlings farm, in Clay County, in the southeastern part of the State.

Field Pickups

Petroleum Exploration Co. is drilling on the Theodore Spurlock farm, in Clay County, in the eastern part of Kentucky, and made a location on the General Spurlock farm, same county.

Miller and Damron are drilling No. 3 on the Cox heirs farm, south of Liva, in McLean County. Cameron & Trout are drilling on the Marie Bond, same field. The Ohio Oil Co. is drilling No. 1 Eugene Craven. Louisville Gas & Electric Co. is drilling No. 1 F. D. Robertson farm, all in McLean County, where several other wells are going down in the vicinity of Grindstone Hill.

In the Taffey Pool, of Ohio County, Brown and others' No. 4 on the T. L. Hickey farm, produced 10 bbls. the first 24 hours. The Ohio Oil Co., in the same area, is drilling on the Morgin Ashley 124 acres. James C. Ellis and others are drilling No. 2 Melvin S. Bartlett, in the same field.

James C. Ellis and others are drilling No. 2 Frank McKinley, in the Aetnaville section of Ohio County.

Total runs from wells served by the Illinois Pipe Line Co. in western Kentucky during the month of June, 1930, were 267,085.53 bbls.

Prairie Oil & Gas Co. is reported drilling three wells in McLean County, on the Louis Tompkins, Virgil Mackmore and J. H. Pate farms.

EXPLORATION FOR OIL MUST KEEP RIGHT ON

LOS ANGELES, Calif., July 12.—The California Oil & Gas Association says that, regardless of the low price of oil and the high cost of drilling in California, the industry in this State finds it necessary to search incessantly for new sources of supply.

"As distinguished from a well destined for production which may be drilled in from two to six months, it requires from six months to a year or more to drill the average discovery well," says Herbert R. Macmillan, president of the association, "and if exploratory work stood still during curtailment, there might come a period of underproduction before new fields could be found and developed. The country is highly motorized and the industry is charged with the responsibility of finding enough oil to supply its needs at all times.

"The most satisfactory state of affairs would be one in which there would be neither a feast nor a famine. Just now we have an oversupply of oil which has thrown our economic structure out of balance. We must see to it that we do not drift into an era of underproduction after the present crisis is over."

Attention is called to the fact that Kettleman Hills and Elwood are the only highly important oil fields that have been found in California for several years, unless Venice proves to be an unexpected surprise. Round Mountain, Poso Creek and Fruitvale are yielding considerable oil, but the product of those fields is of somewhat heavier grade than is desirable for motor fuel.

It is pointed out that it costs more to drill an oil well in Kettleman Hills Field than anywhere else in the nation. Estimated on basis of 7,200 feet in depth, these holes cost approximately $200,000, or an average of about $27.50 a foot. In the heavy oil fields of Kern River, the cost of a 2,400-foot well averages about $29,000, or about $12.10 a foot. In the light oil zones at Santa Fe Springs, the cost is approximately $120,000 for a hole 5,800 feet deep, while some of those which have gone to 7,800 feet or deeper have ranged in cost from $150,000 to, perhaps, $200,000.

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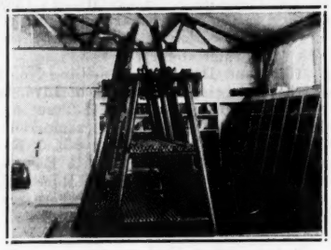

solved at McElroy Field warehouse of the Gulf Production Co. in Crane County, Texas, by building a rack out of old pipe.

The sides of the rack form slightly tilted stands for the working barrel and pony rods, while the interior braces of the structure make shelf room for many other parts.

The pipe forming the rack is all old material and welded together to form a solid structure which can be moved around the warehouse as it may be necessary.

EASTERN FIELDS

(Continued from Page 74)

farm. On Rush Run, Smithfield district, Roane County, the United Fuel Gas Co. has started drilling on the test well on the Jessie Savage farm. On the same run, and in the same district, the Union Gas Corp. have a rig up for No. 1 on the W. T. Eppling farm. It is in settled territory. In the same district the Freef Oil & Gas Co. has started on its second test on the F. F. Parless farm.

SOUTHWEST PENNSYLVANIA

There were three gas wells completed in this field and no oil wells brought in. The largest of the gassers was the second well brought in by Fry and McCracken on the John McGinnis farm, Richill Township, Greene County, across the line from the No. 1 reported in Cameron district, Marshall County, West Virginia. It was drilled to the Salt sand at 1,549 feet and is a good gasser. In Perry district, Greene County, the Philadelphia Gas Co. drilled No. 3 on the Spencer Stevens farm deeper to the Bayard sand, 3,258 feet, and has a light gasser. In Green Township, of Greene County, the same company completed No. 2,982 on the John Reason farm to the Bayard sand and it is a fair gasser.

PONCA CITY OPENS HANGAR

Gen. James E. Fechet, head of the Army Air Service, was the principal speaker at exercises dedicating the new municipal hangar in Ponca City, Okla. Others were W. J. Holloway, governor of Oklahoma; D. J. Donahoe, president of the Ponca City Chamber of Commerce, and Charles B. Braun of Dallas, Tex., representing the National Air Transport Corp. The hangar, which was constructed by Whealton-Townsend, Inc., of Tulsa, embodies modern features which are said to make it one of the best structures of its kind in the United States.

J. L. MAYFIELD DIES

WICHITA FALLS, Tex., July 12.—Joseph L. Mayfield, 52, widely known oil operator, died here after an illness of several months. Mr. Mayfield took an important part in the development of the Wichita Falls and other North Texas fields. He was born in Kosciusko, Miss., in May, 1878, came to Wichita Falls 16 years ago, entering the oil industry at Electra, and opening a number of new pools in the county.

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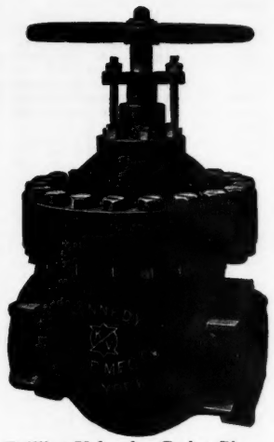

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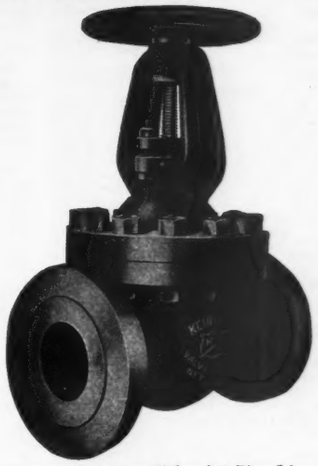

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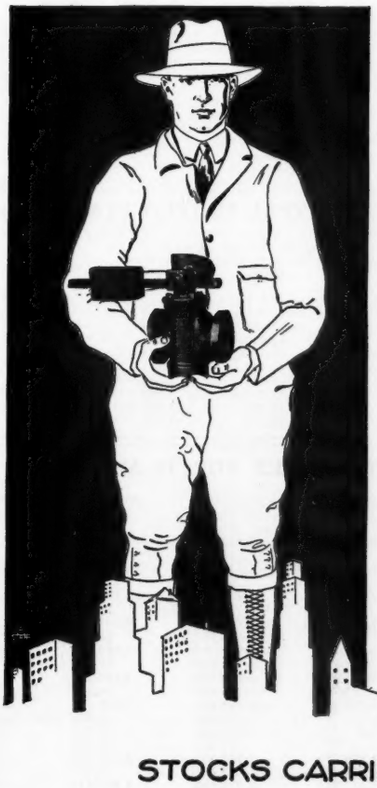

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